FIRE STUDIO™ 5.3 INSTRUCTOR EDITION
USER MANUAL

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Fire Studio 5 (Software Activation Required)

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An Introduction to Fire Studio

Fire Studio is a professional software tool that allows you to create simulations for fire, hazmat, and other emergency situation training exercises. It is designed to give you the freedom to create situations you feel your organization will face and then use the simulation to prepare for it. Fire Departments, emergency personnel training facilities, military institutions, colleges, and other various government organizations from around the world currently use Fire Studio for training exercises.

At the heart of Fire Studio lay its most important feature: importing custom digital photos. Anyone using Fire Studio has their own unique structures and hazards they may potentially be required to deal with. With Fire Studio, you can take pictures of these structures, import them into the software, create a simulated incident, and then use your simulation to train personnel. It doesn't matter if it's a residential house, oil platform, commercial jetliner, or fast food restaurant, if it can burn, smoke, leak, or explode, it belongs in Fire Studio.

Fire Studio was created to conform to a broad spectrum of teaching formats. Many instructors find that projecting simulations onto a screen for the entire class to view works best for them, while others prefer the hands-on approach of having each student sit at their own computer. Instructors that want to run advanced training exercises can take control over multiple Fire Studio installations across a network or the Internet using our Communication Link software.

No other software on the market is as user-friendly, cost-effective, and well-respected as Fire Studio. Increase the decision-making skills for all of your personnel involved in emergency response to help save lives. Take your instruction to the level of detail and professionalism required to prepare your organization for what they might face. Take them into the Fire Studio.

About Fire Studio 5

Over the course of the past several years, Fire Studio has proven to be North America's leading fire simulator, expanding to an customer base of over 4,000! Version 4 continues to be lauded as the friendliest, cheapest, and most feature-rich simulator for the PC, and has begun taking root beyond the borders of North America, particularly in the United Kingdom, Australia, and parts of Europe.

Version 5 builds on the strengths of its predecessors, making the integration of custom media easier, while also expanding the range of features, such as the ability to zoom and pan the camera during playback. As always, we strive to integrate changes and new features based on what many of our customers have reported, and will continue to do so as this new release matures.

Although version 5 changes the way in which simulations are organized and built, it retains compatibility with version 4 simulations. This means that users can load any of their Fire Studio 4/4.1 simulations in Fire Studio 5.

Instructor vs Player

Simply put, the Instructor Edition allows you to create and play Simulations, while the Player Edition only has the capability to play. Simulations cannot be modified either temporarily or permanently with the Player Edition.

The Instructor Edition forms the foundation of your Fire Studio training model. In most setups, the Player is used to complement the Instructor by providing the ability to show Simulations on multiple computers. This setup provides the ability to train multiple personnel at once, most often with each looking at the incident from different perspectives. To control the aforementioned views remotely across a network, you will need Digital Combustion's Communication Link™ software.

Fire Studio Key Features

- Import your own photos and create realistic simulations.
- Create Simulation test questions directly on the screen.
- Use Simulations created by the Blue Card Command Training program.
- Simulate "reading smoke" situations.
- Interactive user-event options.
- Simulations are completely customizable by you and can be created for NIMS / ICS / IMS training.
- Moving camera views (NEW)
- Numerous fire, smoke, clip art, and explosion types. All customizable by size, color, speed, and many other factors.
- Motion video clip art.
- Built-in masking tool to create the effect of smoke and fire behind structures.
- Capture simulations to video files for use in PowerPoint© or movie players.
- Take still-shots of your scene to print or add to presentations.
- Import videos to use as backgrounds to your simulation.
- Import your own narrative as a WAV file or record your voice to a video of your simulation on the fly.

New in version 5.0

- Pan and zoom the viewing camera on your scene to show only certain areas of a background or to simulate an approach.
- A whole new way to organize and import your media by means of libraries, which are fully customizable by you.
- Export your libraries to other computers so other people may use them.
- Re-size Fire Studio to any height and width. Vastly improved minimize, restore, and full screen commands, all accessible without restarting Fire Studio.
- A redesigned user-interface that changes according to what you're working on.
- Import your simulations from Fire Studio 4/4.1.

- New dynamic help text field shows text dialog of all actions executed during simulation creation.
- Helper Windows that let you see where linked animations are located and assist in copying windows.
- An entirely new and updated install routine that provides better means to activation and moving of licenses.
- Save and Load media from anyplace on your computer. No longer does your content need to remain in the Data folder.
- A new Load Video button prevents double playback of videos that caused slowdown for some users in earlier versions.
- Events can be set to change the scene to both a specific Slide and Window.
- Name your individual layers and save them to be used in other Simulations.
- Masks can be selected and moved like any Layer.
- Linked Layers occur much less frequently.
- Quickly move Slides to any position in your Simulation.
- Create a new Slide without copying the previous one.
- Load new images without having to exit the program.
- Copy a slide in one Simulation and Paste it into another.
- Change the ambient light of a scene using slider color controls. Animate the light change over time.

Version 5.3 Changes

- New installation and licensing service. Now includes a "self-serve" web-based activation and deactivation procedure.
- Exported Sim Libraries will now include all custom content, including content from previously exported individual Libraries.
- The default Libraries can no longer be Removed.
- A custom user folder labeled FireStudio5 is created in Documents to house user files. This should help address user accounts with restricted access.
- Linked Layer Event Times no longer mirror one another, allowing you to create a Linked Layer that won't fade in repeatedly over all Slides.

System Requirements

	Minimum Requirements	Recommended	Not Supported
Operating System	MS Windows XP/Vista/7 (32 bit and 64 bit)	MS Windows 7 Professional	All Other
CPU	Pentium 4 or AMD Athlon 64 or faster	Intel Core 2 Duo, i5, or i7	Celeron
System RAM	512 MB	2-3 GB+	-
Hard Disk Drive (HDD)	4 GB+ free space, 5400 RPM	7200 RPM	-
Video Card / Graphics Chipset	Discrete chipset with dedicated VRAM, NVIDIA GeForce or ATI/AMD Radeon, 128 MB+ VRAM	NVIDIA Geforce series or ATI/AMD Radeon dedicated chipset with 512 MB+ VRAM	Any chipset without dedicated VRAM, additionally NVIDIA Quadro, NVIDIA NVS (Quadro), ATI FirePro, ATI FireGL
CD / DVD ROM	Optional	-	-
Sound Card / Sound Chipset	Required for sound playback	-	Realtek (will not capture sound to video file)
Screen Resolution	1024 x 768	-	-
Keyboard	Required for text entry	-	-
Mouse / Touch-Pad	Optional	Mouse	Touch Screen

Additional Considerations

- Microphone and sound card with MIC-IN for recording voice or sound effects
- Digital camera for taking photos and importing them into Fire Studio
- Digital video camera for recording video to import into Fire Studio
- Network Interface Card (LAN card) for network connection with Communication Link or network sharing resources
- Video card with TV-capture capability for capturing video from a DVD player, VCR, or television
- Photo/Image editing software (Adobe Photoshop©, Paint.Net©, etc.) for making advanced modifications to digital photos or creating clipart
- Speakers for connection to sound card

System Performance

Your computer's hardware and software has a major impact on the performance you can expect from Fire Studio. For most simulations, when the above requirements are met, Fire Studio will perform at desired levels. However, if you are attempting to run the software on a system that does not meet the above requirements, or you are designing incredibly large simulations, you may face some performance slowdown.

Fire Studio 5 will push the capabilities of your computer as you design more intense simulations using larger amounts of media. Pay special attention to the performance of Fire Studio as you design your simulation and keep in the mind the capabilities of the system you intend to playback the simulation on. If the computer you are designing your simulation on is much more powerful than the other, you should periodically test the simulation on the other system to be sure it won't become overburdened. **Always test out your simulations on the playback system before you present them.**

Guidelines for Better Simulation Playback Results

- Design Simulations with the hardware level of the playback computer in mind. Test your Simulation on the playback system to ensure it can handle what you've made.
- Close any unnecessary applications running in the background.
- Load simulations and view them just prior to use. This will load the Simulation into memory.
- Keep custom photos to a reasonable size by resizing them to the desktop resolution of your computer.
- If a Slide appears choppy or takes too long to load, try removing Layers that are either unseen or unnecessary.
- Be sure your playback computer meets the hardware requirements of Fire Studio 5. Computers playing back Simulations must also have the appropriate graphics chipset and dedicated RAM.

Video Capture

Fire Studio 5 has a built-in feature to record Simulations into AVI format allowing them to play like a movie in such programs as Windows Media Player.™ You can even take this a step further and use 3rd party applications to convert the AVI file into DVD-Video for playback on DVD players.

However, Fire Studio 5 is first and foremost an emergency simulator, and the built-in capture function uses only the basic software included in Microsoft Windows. For most users, basic video capture will be sufficient for their needs. Fire Studio users that require more robust video capturing capabilities should consider 3rd party applications dedicated to this task. A few of the most well-known examples are Camtasia,™ Fraps,™ and Camstudio.™ We highly recommend users review all three of these before deciding which to use.

For those who want to use video capture within Fire Studio, you will need to obtain better codecs than what Windows includes by default. Most codecs can be obtained for free on the Internet, but for a "one-stop-shop," we recommend www.free-codecs.com. Currently, we recommend FastCodec 1.0 with the Visually Lossless compression setting for any video capturing in Fire Studio.

Uncompressed (Full Frames) video is always an option, but for video capture at the *High* setting (640 x 480), your video file will become very large, very fast. Uncompressed will, however, provide the highest quality video, and we recommend users of Fire Studio to experiment to find what suits them the best.

Keyboard Shortcuts

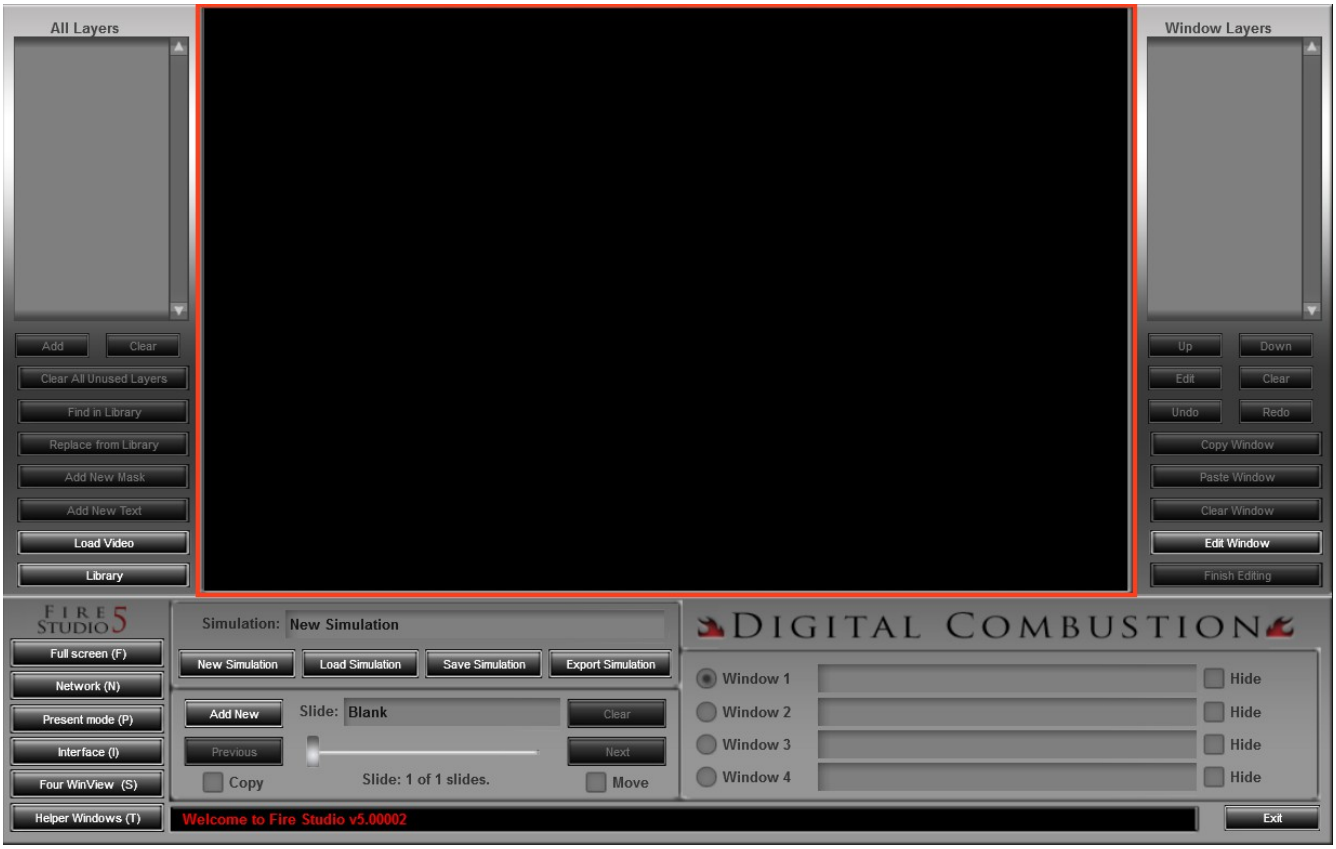
What you want to do	Key	Author	Present
Change between Four Window view and Single Window view	S	X	X
Open/Close the Network Panel	N	X	X
Show/Hide the Fire Studio Interface	I	X	X
Change to Present Mode	P	X	
Change to Author Mode	A		X
Show Fire Studio 5 in a Window or in Full Screen	F	X	X
Show/Hide selection rectangles	Space	X	
Pause the Slide (when Interface not shown)	Space		X
Display/Hide the Helper Windows	T	X	
Move to next Slide	Right Arrow	X	X
Move to previous Slide	Left Arrow	X	X
Move to next item in a selected scroll-down menu	Down Arrow	X	
Move to previous item in a selected scroll-down menu	Up Arrow	X	
Show/Hide the Mini Panel (when Interface not shown)	Tab		X
Show/Hide window information overlay	F2	X	X
Change window information overlay between black & white	F3	X	X
Display Direct3D Settings (Recommended for Advanced Users Only)	F5	X	X
Jump to Slide. Use: [J] then [Slide #] then [Enter]	J		X
Select one of the four Windows in the current Slide	1 to 4	X	X
Hide/Unhide Windows 1-4 in the current Slide	Shift 1 - 4		X
Event Key (Numeric Keypad)	Num 0 to 9		X
Event Key (Typewriter Keys)	Ctrl 0 - 9		X

The Main Console Interface

While designing Simulations in Fire Studio 5, you will interface with the Main Console displayed in Author Mode. The display at the bottom of the Main Console may change according to what Panel you are viewing, but the left and right side will remain visible, whether lit or not, other than for a few exceptions.

We'll start with the key features of the Main Console you should familiarize yourself with early on and then investigate the various other commands you will use while creating your Simulation.

The Viewing Area



This is the space located between the All Layers Panel and the Window Layers panel. When you first start Fire Studio, it will be completely black. Your Slide or Window contents will be shown here and can display either one Window at a time, or all four Windows. It is possible to remove the Interface by pressing I on your keyboard, or clicking on the Interface button, so you can see only the Viewing Area. This is ideal for showing your Simulation to an audience.

The All Layers Panel

On the top-left portion of the Main Console is the All Layers Panel. Here you will see a list of all the Layers included in your entire Simulation. Even Layers that have been added, but then removed, will remain listed here unless you use the Clear All Unused Layers button. Use the scroll bar or arrows to the right of the All Layers Panel to see additional Layers in the panel.

Various commands rely on the All Layers Panel and what you have selected there. We'll investigate more closely in the sections below.

The Window Layers Panel

On the top-right of the Main Console is the Window Layers Panel. Here you will see a list of all the Layers included in the current Window you have selected. Only Layers actually located in the Window will be listed, unlike the All Layers Panel, which will keep track of Layers even if removed. Use the scroll bar or arrows to the right of the Window Layers Panel to see additional Layers in the panel. The Layer at the bottom of the list is considered to be on the top of the stack, whereas the top-most Layer is on the bottom. When placing Layers over one another, the Layer further down will cover any Layer above it on the list.

Various commands rely on the Window Layers Panel and what you have selected there. We'll investigate more closely in the sections below.

The Message Box

At the very bottom of the Main Console Interface is a black text area where messages will appear that tell you what command you just clicked or action you took. Keep an eye on the Message Box to make sure you select the right Layer or perform the command you wanted to.

Exiting Fire Studio 5

Why: All good things must come to an end. When you're ready to quit Fire Studio, you will need to shut the program down.

How:

1) Method 1 : Left click on the Exit button located at the bottom right of the Main Console Interface. Method 2: Left click on the Windows Exit button located at the top right of the program, denoted by an X.
2) You will be asked to confirm your decision and Save any changes you have not yet saved. Click OK to Save the changes and exit.

Tips: Don't get in the habit of relying on the Save function during Exit. Save your Simulations

often! In the event of a crash or critical error, you don't want to lose a lot of work.

Standard Windows Features : Minimize, Maximize, and Close

At the top right your program window, just above the Window Layers Panel, you'll see the three standard buttons you're likely familiar with in normal Windows ® OS menus. You can use these buttons to minimize, maximize, and close Fire Studio, respectively. Unlike previous versions of Fire Studio, you can now re-size the program to fit your needs. Note that maximizing your Fire Studio with the related button keeps it in a window, leaving access to the taskbar at the bottom and the three aforementioned buttons at the top. This differs from the Full Screen command that removes the top and bottom bar to expand Fire Studio 5 to its true maximum size.

Commands on the Main Console : Lower Left-Side

Full-Screen

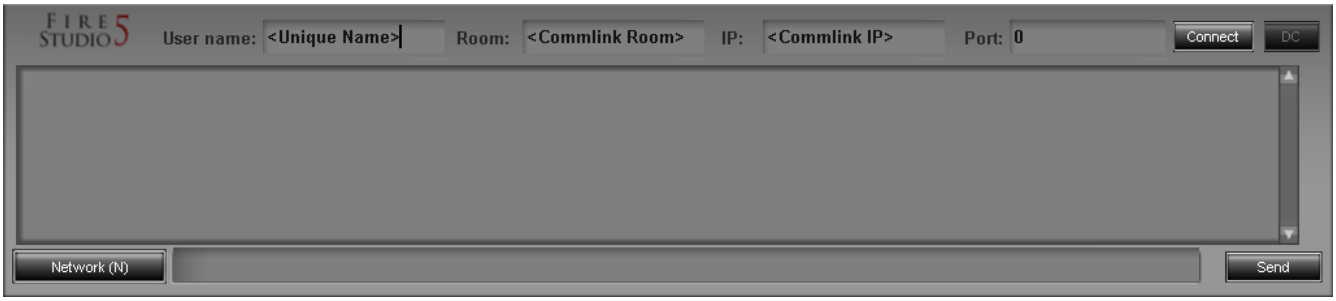
Why: To achieve the maximum Viewing Area, you will need to use the Full-Screen command. It expands your console to the outer edges of your desktop.

How:

1) Left click on the Full-Screen button.
2) To return to viewing in a window, click on the same button again.

Tips: Viewing in Full-Screen is ideal when using Simulations in a class or training center. Unless you need to show other applications to your audience, you can remain in Full-Screen for the length of the exercise.

Network



Why: The Network feature is applicable only to those connecting to Digital Combustion's Communication Link software over a Local Area Network or the Internet using a Virtual Private Network. This command activates the connection process to connect to Commlink.

How:

1) Prior to using this function, your computer should be connected to the network and Communication Link (Commlink) should be running. Refer to the Communication Link manual for more details on the network connection requirements and setup.
2) Click on the Network button or press "N." This brings up the Network Panel.
3) User name : Enter in a ***unique*** name which will identify you and this computer in Communication Link and press Enter. Another person connecting to Commlink ***cannot*** share the same name.
4) Room : Enter the Room Name you are connecting to and press Enter. This should be the ***same*** name created by the Commlink Operator when Commlink was launched. It ***must*** be the same name in order to connect properly.
5) IP : Enter the IP address of the Commlink computer and press Enter. This will appear on the Commlink screen when it first launches.
6) Port : Enter the Port number that Commlink is using and press Enter. This will appear on the Commlink screen when it first launches.
7) Click on Connect. Fire Studio will attempt to locate Commlink and establish a connection.

If the connection is not found, confirm you entered all information accurately. Firewalls can prevent access as well. Refer to the Communication Link manual for more details.

Tips: Showing multiple perspectives of an incident is one of the most robust methods of using Fire Studio for training exercises. Communication Link allows the training officer or controller to manage and manipulate all the Fire Studio connections from the ease of a single computer. Without Communication Link, there is no functionality of the Network button, nor any way to connect one installation of Fire Studio with another, other than media exchange.

Present Mode

Why: When using your Simulation in a training exercise or to preview it in preparation for such an exercise, you will use Present Mode.

How:

1) Click on the Present Mode button (or press *P*).
2) To return to Author Mode, click on the Author Mode button while the Present Mode Interface is displayed, or press *A* at any time.

Tips: There is much more to be said about Present Mode, which will be covered in a later section.

Interface

Why: To remove or restore the Interface Console.

How:

1) Left click on the Interface button (or press *I*).
2) Repeat the above to reveal the Interface Console again.

Tips: Removing the Interface in Author Mode makes it appear as if you're in Present Mode. If you need to move Layers or perform some other Author-Mode only techniques, but are showing your Simulation to an audience, this will be the way to do it.

Four WinView

Why: If you want to display all four Windows at once, or at least work on all four at once, you will need to switch to Four Window View (Four WinView).

How:

1) Left click on the Four WinView button (or press *S*)
2) Repeat the above to change back to Single Window View.

Tips: While in Present Mode, a Slide will appear exactly the way you design it in Author Mode, including whether it shows just one or all four Windows. When you're working in Author Mode, set the view to how you want it to appear when changing to that Slide and Save the Simulation with that configuration.

You can use the four Windows in any way you like, but the most common use is to display different views of the location at one time. Your Slide may have Side A-B in Window 1, Side C-

D in Window 2, an interior shot in Window 3, a roof view in Window 4, etc. If you don't want to show all of the views at once, you can still setup each Window with imagery, but show only one Window in the Single View Mode, and change the Window displayed using the numbers 1-4 on your keyboard.

Helper Windows

Why: Showing the Helper Windows provides assistance in two areas: a look into the Copy Window buffer, and a remote view of a Window containing a particular Linked Layer. If you are using Copy Window often, this view can be useful in identifying the Window that will be placed if you do a Paste Window.

How:

1) Click on the Helper Windows button (or press T).
2) Repeat step 1 to exit Helper Windows view.

Tips: The Helper Windows view will automatically appear when you Edit a Linked Layer and then select one of the Windows in *Layer Instances*. The Instance Window will show the Window you have selected so you can see where the Layer is being used. Note that the Edit commands are still available in this mode and any modifications you do are for the current Window, not the one that appears in the Instance Window. Refer to the Copy Window and Edit Window sections of this manual for more details on using those commands alongside the Helper Windows.

Commands on the Main Console : Left-Side

Add

Why: You can Add a Layer from the All Layers Panel instead of through the Library Panel if there is an existing Layer you want to replicate.

How:

1) Select the Layer in the All Layers Panel.
2) Select the Window you want to place the new Layer in.
3) Click on the Add button located below the All Layers Panel.

Tips: If you've created a nice Layer in your Simulation by Editing the various properties for it, Adding the Layer is the best way to replicate that Layer in other Windows.

Clear

Why: The Clear button allows you to remove a single unused Layer from the All Layers Panel. This button will only light up when you have a Layer selected that is no longer being used in your Simulation.

How:

1) Select the Layer you want to remove from the All Layers Panel.
2) Click on the Clear button when it is highlighted. Only when an unused Layer is selected will this button be lit.

Tips: It's a good idea to keep your All Layers Panel as clean as possible. If you've added and then removed a Layer, you may want to immediately remove it from the All Layers Panel. You may also decide to remove some unused Layers, but keep others to be used again in a different Window. However, you always have the choice to remove All Unused Layers with the button below.

Clear All Unused Layers

Why: If you want to remove all of the unused Layers from your All Layers Panel, the Clear All Unused Layers button will do just that.

How:

1) Click on the Clear All Unused Layers button. It will only be lit if there are unused Layers in the All Layers Panel.
2) You will receive a warning message asking if you want to proceed. Click OK to proceed.

Tips: Clearing all of the Unused Layers from the All Layers Panel helps reduce the size of the

Layer list. If you're not going to be Adding any of the unused Layers there, it's a good idea just to remove them. When you've finished making your Simulation, it's a good idea to use this feature to remove anything you have lingering in the All Layers Panel.

Find in Library

Why: The Find in Library command allows you to locate the selected Layer within a Library you currently have loaded. If you've modified a fire animation, but want to Add the original, this command will locate that Layer for you to Add.

How:

1) Select a Layer in the All Layers Panel. This Layer is the one you want to find the original for. If you don't have a Library loaded that contains the original, or you've selected a Mask, the Find in Library button will not be lit.
2) Click on the Find in Library button.
3) The Library Panel will automatically open and highlight the correct Library and Layer.

Tips: While this command will point you to a Layer in the Library, it won't locate the selected Layer in your Simulation.

Replace from Library

Why: The Replace from Library command allows you to swap a Layer present in your Simulation with one from the Library. Doing this would allow you to test different Layers in your scene without losing any property adjustments made to it.

How:

1) Find and select the Layer you want to replace in the Viewing Area.
2) In the Library Panel, find the Layer you want to put into your Simulation and select it.
3) Click on the Replace from Library button on the Main Console.

Tips: As stated above, when replacing a Layer in this fashion, the properties of the Layer already present will carry onto the Layer you are putting in. You can only replace a Layer with another of the same type: background with background, sound with sound, etc.

Add New Mask

Why: Masks allow you to cover sections of another Layer and are most often used to create an illusion of fire or smoke appearing from behind a structure.

How:

1) Change to the Slide and Window you want to place the Mask into.
2) Click on the Add New Mask button.
3) Manipulate the four points of the Mask by left-clicking and holding, while dragging the mouse.
4) Move the entire Mask by left-clicking and holding at any location within the Mask, just as you would any other Layer.

Tips: Masks can have numerous uses in hiding objects in your Simulation. Fire or smoke that drifts farther than you like can be masked. If want to show only one portion of a vehicle, you can mask off the rest. And since Masks are like normal Layers, you can edit the properties to make them different colors, to fade in or out, be click-able, and so on. Refer to the section *Using Masks in your Simulation* for more detailed instructions on how to apply a Mask.

Add New Text

Why: Inserting Text into your Simulation can provide a means to give information to your participants, provide on-screen direction, ask questions, or even provide instant responses to decisions made in the scenario.

How:

1) Change to the Slide and Window you want to place the Text into.
2) Click on the Add New Text button.
3) The Edit Layer Panel immediately opens and allows you to change the written text. Type in what you like and press Enter.
4) You can edit the Text further if you like, or click on Finish Editing to work on something else.

Tips: Text acts similarly to Layers in your Simulation and can be adjusted for color, fading, size, and so on. Unlike version 4, in Fire Studio 5 you must Edit the Text in order to change the words.

Load Video

Why: In Fire Studio 5, you can use an AVI movie as a backdrop to your Slide-- even your entire Simulation if you wish. The movie may be an approach shot, a witness account, or even the actual scene itself where you can place fire and smoke.

How:

1) Go to the Slide you want to Load the Video into. This can be a new Slide or an existing one.

2) Click on the Load Video button.
3) Locate and select your AVI video.
4) Choose Open to load the video.

Tips: Almost all videos are compressed in some way. The "recipe" for how these videos are compressed is referred to a codec. There are both audio and video codecs. Fire Studio will attempt to use what codecs you have installed on your operating system to read any video you try to import. However, if you import a video that uses an unusual codec, Fire Studio may not be able to load it. If this happens, you will need to investigate what codec is being used and then get that codec installed on your system.

As an alternative to the above, there is a free application on the Internet called *VirtualDub*. This program will process an AVI video using a more *vanilla* codec that most systems should be able to read. If you have trouble loading your AVI into Fire Studio and can't find the appropriate codec, you might want to try using this application.

Slide/Library

Why: You will use the Slide/Library button to change between the different relevant panels. Refer to the sections later in the manual for more details about the two.

How:

1) Left click on the Slide button to change to the Slide Panel.
2) Left click on the Library button to change to the Library Panel.

Tips: You will be using the Slide/Library button often. Become familiar with the options at your disposal with each.

Commands on the Main Console : Right-Side

Up

Why: This command moves the selected Layer up in the Window Layers list. Moving a Layer up puts it behind the items below it.

How:

1) Select the Layer in the Window Layers Panel you want to move.
2) Click the Up button

Tips: Smoke tends to look better in front of a fire on a scene, so you will want to move fire Up in the list until it is behind the smoke accompanying it.

Down

Why: This command moves the selected Layer down in the Window Layers list. Moving a Layer down puts it in front of the items above it.

How:

1) Select the Layer in the Window Layers Panel you want to move.
2) Click the Down button.

Tips: If you're covering a Layer with a Mask, you'll want to be sure the Mask is located further down on the Window Layers Panel than the Layers it will cover.

Edit

Why: You can use the Edit command to change the properties of the selected Layer.

How:

1) Select the Layer you wish to modify.
2) Click on the Edit button.

Tips: Details on the Layer Properties Panel will be discussed in depth later on in this manual.

Clear

Why: If you want to remove a Layer from the Slide, you can do so with the Clear command.

How:

1) Select the Layer you wish to remove.
2) Click on the Clear button on the right side of the Main Console.
3) Click OK to clear the Layer or Cancel to not.

Tips: Do not confuse the Clear button on the left of the console with this one.

Undo

Why: The Undo command allows you to cancel a previous action you took-- or take a step back and undo an earlier command. In most cases, this is the command you just executed, but some changes are grouped together, and using Undo will step back before all of them.

How:

1) Click on the Undo button.

Tips: The Undo command is a very handy way of undoing a command or action you took on accident or simply don't like. You can even Undo loading or starting a new Simulation. However, once you exit Fire Studio 5, the history preserved will be erased, and you won't be able to Undo the last action.

Changes made in in the various panels will be grouped together and using the Undo command will bring you back before all those changes were made. While you're editing a Layer, for example, as long as you don't deselect it, you can use the Undo command to step back those

changes. However, once you have finished editing, any Undo command will bring your Layer back to BEFORE those changes were made. If you step back too far, you can use the Redo command to put those changes back in effect.

Redo

Why: The Redo command is the opposite of Undo. Any action you have undone with the Undo command, can be redone with the Redo command.

How:

1) Click on the Redo button after you have just used the Undo command.

Tips: If you've stepped back too much or want to compare a change before and after, the Undo and Redo combination can be a useful tool. Keep in mind that Redo works similarly to Undo and both keep track of the same historical change path-- if Undo brings you from point D to A for example, then Redo would go from A to D (assuming A and D represented points of change in your Simulation).

Copy Window

Why: You can Copy the entire contents of a Window and Paste it into another Window. Unlike duplicating a Slide, copying a Window will not link the Layers they share.

How:

1) Select the Window you wish to copy.
2) Click on the Copy Window button.
3) Refer to the next section for pasting.

Tips: If you use the Helper Windows view, you can see what Window you have in the Copy Buffer. This is what will be placed if you click on the Paste Window button.

Paste Window

Why: Once you have copied a Window, you need to Paste it into another Window to place the contents.

How:

1) Select the Window you want to Paste the contents of the Copy Buffer into.
2) Click on the Paste Window button.
3) If you are pasting over existing contents, you will get a warning message asking if you would like to proceed. Click OK to place the contents.

Tips: Copying and Pasting Windows will work within the same Slide and also between any Slide in your Simulation. Check the Copy Buffer by means of the Helper Windows view if you aren't sure what will be Pasted.

Clear Window

Why: The Clear Window commands allows you to wipe a Window of all content: it will become empty once again.

How:

1) Select the Window you want to Clear.
2) Click on the Clear Window button.

3) Choose OK to clear.

Tips: While it isn't always necessary to Clear the contents of a Window you won't use, it can help avoid confusion in the future. It will also reduce the file size and overhead of your Simulation.

Edit Window

Why: Using the Edit Window command will give you access to a Panel with various features that can be Edited including access to camera movement.

How:

1) Select the Window you want to Edit.
2) Click Edit Window.

Tips: Refer to the Editing Windows section of this manual for more details on all the features and commands you can access with this button.

Finish Editing

Why: To finalize your changes to editing a Window or Layer, and to exit the various Edit Panels, you will use the Finish Editing button.

How:

1) Once you are finished editing a Layer or Window, click on the Finish Editing button. It will only light up when you are in one of the various Edit Panels.

Tips: When Editing a Layer, it is best not to deselect that Layer until you have finished making all the changes. Once you deselect the Layer, the Undo command will bring the Layer back to what it looked like prior to all the changes you just made. However, while the Layer is selected, you can Undo each incremental change you make to it.

The Slide Panel

When Fire Studio 5 first loads, the Slide Panel is displayed at the bottom of the main console. Here you can Load, Save, or Export your Simulations, create new or delete Slides, and change or Hide Windows.

Slides

The basic structure and use of Slides remains the same as in Fire Studio 4/4.1. Your Simulation will be composed of a number of Slides, where each Slide may represent a scene, a particular moment in time, or the beginning of a new event. Each Slide contains four Windows, though it is up to you to decide how many of those Windows you use per Slide.

Slides vs Windows

A single Slide contains four Windows. You may use any number of these four Windows for each of the Slides in your Simulation, and view them either all at once, or one at a time. If only using a single scene in a Slide, by default you will be using Window 1.

The most common use of Windows are to show different perspectives of an incident at the same point in time. You might have a Side A-B view in Window 1, Side C-D view in Window 2, a roof shot in Window 3, and a larger map of the area in Window 4. If this were Slide 1, these view might represent the incident when personnel first arrive on the scene. Slide 2 would again have all of these views, but show smoke starting to build as time slowly passes. In Slide 3, you might have fire beginning to appear. In Slide 4, a fully engulfed structure. And in Slide 5, you might begin to see the fire put out, and so on. The time between these Slides can be determined by the instructor during the exercise, or predetermined and set on a timer within the Simulation.

Starting a New Simulation

Why: When you have finished working with one Simulation and want to start another, you will need to begin a New Simulation.

How:

1) In the Slide Panel, click on the New Simulation button.

Tips: You will receive a warning message asking if you want to proceed if there are changes that have not been saved in your current Simulation. Click OK to start a New Simulation or Cancel to keep the current Simulation open. Even if you start a New Simulation on accident, you can press the Undo button to go back to the Simulation you were just working on.

Loading an Existing Simulation

Why: In order to play or edit a Simulation you have saved, you must first Load it into the program.

How:

1) In the Slide Panel, click on the Load Simulation button.
2) Navigate to the folder with the Simulation you wish to Load.
3) Click on the Simulation file to select it.
4) Click the Open button.

Tips: In Fire Studio 5, you will Save and Load Simulations using the standard Windows interface. This means you can place your files anywhere you like on your computer. If you are loading a Simulation that was Exported from another system, make sure the .lbr file is located in the same folder as the .dcs file (Simulation) you are loading.

Saving Your Simulation

Why: When you want to make your changes permanent, you will need to Save your Simulation.

How:

1) In the Slide Panel, click on the Save Simulation button.
2) Navigate to the folder you wish to Save your Simulation to.
3) Enter a name for your Simulation.
4) Click Save.

Tips: Be sure to Save your Simulation in a place you remember or that makes sense. We highly recommend using the *FireStudio5* folder located in Documents or creating your own folder in *Documents* where you will place backgrounds, library files, or other material related to this Simulation. *Placing your files anywhere within the Program Files folder or even within the Digital Combustion system folder located there MAY cause issues with some users depending on your version of Windows and your account permissions!*

Saving a Simulation does not make it ready for transport to another computer. If you plan to do this, you will need to use the Export Simulation feature.

Exporting Your Simulation to Use on Another Computer

Why: You will need to use the Export Simulation feature if you want to move your Simulation from one computer to another.

How:

1) If your Simulation is not yet loaded, do so now.

2) Click on the Export Simulation button in the Slide Panel.
3) Similar to Saving your Simulation, a Windows interface will appear allowing you to navigate to the folder you want to Export your Simulation to. It is a good idea to choose a folder in *Documents*.
4) If needed, type in a name for your Simulation.
5) Click the Save button.
6) At this point you will have a .dcs file and if you've used any custom media then you will have a new .lbr file that will contain said media. These two files will need to be copied to the new computer to run the Simulation. In version 5, you can place the .dcs and .lbr files anywhere on the new computer, but they must be kept together.

Tips: Although technically possible to move the individual media files and the .dcs file to accomplish this task, it is easier to use Export Simulation and then move only the .dcs and .lbr file, which will contain all custom Layers or Backgrounds from your Simulation.

Moving to Another Slide

Why: You will often need to go between various Slides in your Simulation during the creation process.

How:

1) Method 1 : Press the Right and Left arrow keys on your keyboard to move one Slide forward or back, respectively. These keys are enabled only when in the Library or Slide Panels.
2) Method 2: In the Slide Panel, click and hold on the Slider Bar and move it left or right to change Slides accordingly.
3) Method 3: In the Slide Panel, click the Previous button to step back one Slide, and click the Next button to step forward one Slide.

Tips: The methods listed above are for Author Mode. Several other options exist in Present Mode, such as the Jump shortcut and selectable navigation icons.

Adding a New Slide to Your Simulation

Why: As you build your Simulation, you will need to Add additional Slides. You can Add blank ones or you can Add copies of an existing Slide.

How:

Add a Blank Slide

1) Be sure there is not an X in either the Copy or Move box on the Slide Panel.
2) Click on the Add New button. The blank Slide will be placed at the end of your Simulation.

Add a Copy of an Existing Slide

1) Click on the Copy box to place an X there.
2) Navigate to the Slide you want to copy.
3) Click on the Add New button. The copied Slide will be placed at the end of your Simulation.

Tips: In Fire Studio 4, any time you created a new Slide, it would be a copy of the previous Slide. In Fire Studio 5, you have the option of making a blank Slide or a copy of any other Slide you have built already. Adding a copied Slide is the only way you will create Linked Layers in Fire Studio 5.

If you want your new Slide to be placed earlier in your Simulation, you merely have to move it once it has been created. **Remember, the Slide to be copied, is the one currently in view when you click Add New while the Copy box is selected.**

Moving a Slide in Your Simulation

Why: If you want to shift your Slides around or insert a new one earlier in your Simulation, you will need to use the Move feature.

How:

1) Change to the Slide you wish to move.
2) Click the Move box so there is an X in it.
3) Now move to where you want to place the Slide using either the Slider Bar, arrow keys, or onscreen buttons, as detailed in the section *Moving to Another Slide*. As you move, the Slide will move with you.
4) Once you have reached the place you want the Slide to be, click on the Move box again to remove the X.

Tips: Note that when you move the Slide, you will always be looking at the one you are moving. So while the image may not change, its position in the Simulation is. Watch the Slide number at the bottom of the console to keep track of where you are.

Deleting a Slide from Your Simulation

Why: Sometimes it is necessary to delete a Slide completely and remove it from your Simulation.

How:

1) Navigate to the Slide you want to delete.
2) Click on the Clear button on the Slide Panel.
3) A warning message will appear asking you to confirm the erase. Click OK to confirm.

Tips: When you delete a Slide from your Simulation, the Slides that come after it will be moved up one. If you Clear Slide 4 for example, Slide 5 will become Slide 4, Slide 6 will become Slide 5, and so on.

Selecting Windows

Why: To add content to the various Windows, you will need to make that Window active.

How:

1) Method 1 : While in Four View Mode, you can simply click on the Window you want to become active. It will become highlighted in green.
2) Method 2: On the bottom right side of the Slide Panel, click on the circle to the left of the Window names.

Tips: Some options only become available once you have media within a Window. This will be covered in detail later in the manual.

Naming Windows

Why: Sometimes you may want to label a Window for quick reference. You may want to list what side of the building the Window displays, a street address, a certain decision someone made in a prior Slide, or so on.

How:

1) In the Slide Panel, first select the Window you want to Name, using the instructions in the section above.
2) Left click in the Name Box to the right.
3) Type in a name for the Window and press Enter.

Tips: Window name are more useful to the training officer or person facilitating the training exercise than to participants. Use Window names to help guide you through a scenario to display the proper images to your viewers.

Hide/Unhide Windows

Why: Sometimes you might only want to show certain Windows to your viewers. Hiding a Window will turn it black without erasing the contents.

How:

1) Navigate to the Slide with the Windows you want to Hide or Unhide.
2) Left click on the Hide Box next to the Window you want to Hide. An X will be marked when it is hidden.
3) Left click on the Hide Box next to the Window you want to Unhide (there will be an X) and the Window will be displayed.

Tips: If you're creating several perspectives of an incident, it can be easier to create all four views at once using the four Windows, go through and Hide the same Window in all Slides, and then save the Simulation under a different name. Doing this four times would allow you to create four Simulations that show only a single view of that incident. If these four Simulations are loaded onto separate computers at once, you can run a training exercise with participants looking at different angles of an incident.

The Library Panel

To access the Library Panel, click on the Library button located on the left side of the console. The bottom portion of the console will change to the Library console, giving you access to all commands related to Libraries. Users of version 4.0 or 4.1 will be familiar with the layout, but will also notice

that some subtle changes have been made.

Upon running Fire Studio 5.0 for the first time, you will not see anything loaded in the Media Panel: it will be blank. You may not see anything in the Library List either. This is normal. In version 5.0, you have complete control over what media you have at your fingertips. By loading only the content you think you'll use, a lot of unnecessary clutter can be avoided.

Libraries

Libraries contain the media you will load into your Simulation. You will create a library, add content to it, and then that content will be available for use in simulations you create. Libraries can be saved, loaded, removed, or even exported for use on other computers. Think of Libraries as a specific selection of the overall content you have for Fire Studio. You will also use the Library Panel to add media into your Simulation.

Creating a New Library

Why: Creating a new Library allows you to gather various content and have it organized in one group, called a Library. In order to add any element to your Simulation, (fire, smoke, backgrounds, sounds, etc.) you must first include it in a Library.

How:

1) Click on the Create button to the left of the Library List. A Windows panel will appear that will let you select where to create your new Library file.
2) Choose any location you wish, then type in a name for your Library, and click Save.

Tips: It is a good idea to organize your Library files where you will be able to easily locate

them again later. Feel free to use the normal Windows commands to create a new folder to place your Library within. As a suggestion, one good way to organize your Libraries is by Simulation name. If you were creating a Simulation called *Apartment Fire*, for example, you may want to place your Library (and even the Simulation itself) within a folder named *Apartment Fire*. That way, all the content for that Simulation remains within a single folder.

Loading Content into a Library

Why: Loading Content into a Library makes it available to use when that Library is loaded. You must first *load* your smoke, fire, sound, etc. to an existing Library before *adding* it to your Simulation.

How:

1) Select your Library from the Library List on the left side of the Library Panel.
2) The various *Load* buttons will light up on the right side of the console. *If your Library has already been exported, it is locked and will not be able to add to or remove from it!*
3) If you want to add Background photos to your Library, choose Load Background.
4) If you want to add Sound to your Library, choose Load Sound.
5) If you want to add any other media such as smoke or fire animations, clip art, etc. choose Load Layer.
6) A navigation window will appear to let you find the Layers you wish to Load. You can select a single file or you can select a group within the same folder by using Shift + Click or Ctrl + Click. Click *Open* to choose the selection.
7) The selected Layers are now a part of your Library and immediately accessible to add to your Simulation. You can continue to add more Layers to your Library or begin building your Simulation.

Tips: Content such as background photos, fire, smoke, sound, and clip art can all be added to

any number of Libraries. But keep in mind that exported Libraries will carry with them all of the Layers within. If you need to transport several Libraries between systems, this will increase the size of the files. *You cannot Load any kind of Layer into a Library that has been Exported.*

Removing Content from a Library

Why: If you have a Layer in your Library that you aren't using, or you've mistakenly added a wrong Layer, it is a good idea to remove it. Exporting Libraries and Simulations will create large files comprised of the Layers in your Library Lists. Keeping them as small as possible helps to reduce file size and improve efficiency.

How:

1) Select your Library from the Library List.
2) Select the Layer you wish to remove in the Library Content List to the right of the Preview Lens.
3) Click on the Clear button to the right of the Library Content List.

Tips: Removing a Layer from a Library does not permanently delete that Layer. It simply removes it from active use within the Library. If you have that Layer already in your Simulation, it will remain as is. Keep in mind though that if the Layer isn't in a Library, it won't be Exported.

Exporting a Library

Why: Exporting a Library locks its contents and updates the .lbr file to include all of the Layers within it. Doing so allows you to move this Library File to an installation of Fire Studio 5 on

another computer to provide it with the content needed by any Simulation that uses this Library.

How:

1) In the Library Panel, select the Library from the Library List you wish to Export.
2) Click on Export Lib. A Library that has already been Exported will have this button grayed out.
3) The Library is Exported and saved in the location it was created.

Tips: Consider carefully whether you need to Export a Library or not. Once Exported, you cannot modify the Library in any way other than deleting it completely outside of Fire Studio 5; Layers cannot be added nor removed from it. However, an Exported Library can be sent to another installation of Fire Studio and have its Layers then available for Simulations which use that Library.

Removing a Library from the Library List

Why: You may want to remove a Library from your Library List if aren't using it for the current Simulation. Although not necessary, it can be useful to keep your Library List as short and neat as possible.

How:

1) Select the Library from the Library List.
2) Click the Remove button. A warning message will appear. Click Ok if you want to Remove the Library.

Tips: Removing a Library from the Library List does not permanently delete it. You can always Load the Library again at a later time or for another Simulation. If you can't remember what

Layers are within a Library, it is easy enough to Load the Library, review it, then Remove the Library if it isn't what you need. In version 5.3, it is no longer possible to remove any of the standard Libraries that came included with Fire Studio.

Loading an Existing Library

Why: If you need to access a particular Library, whether to modify or use it for a Simulation, the Library will first need to be loaded into your Library List.

How:

1) In the Library Panel, click on the Load button.
2) Locate your .lbr file, select it, and click Open.

Tips: You cannot Load a Simulation Library File; that is, the .lbr file created when you Export a Simulation. That particular Library File links directly to its corresponding Simulation *only* and cannot be modified or used like a normal Library File for other Simulations.

Adding Media to your Simulation

Why: In the Library Panel, you will Add Media / Layers to your Simulation. This will place the selected content into the Viewing Area, where you can then position it into place, as well as make other modifications to its properties.

How:

1) Select the Layer you wish to Add from the Layer List to the right of the Preview Lens.
2) A preview of the Layer will appear in the Preview Lens. Click the Add button.

Tips: When a Layer is added, it highlighted in a green box and you can immediately change it's position or even click the Edit button to modify its properties.

The BG Box

Why: Sometimes it is difficult to clearly see media in the Preview Lens. The BG Box allows you to turn the black background off and on to help show the media more clearly.

How:

1) In the Library Panel, click on the BG box to place or remove the X mark.

Tips: Light colored objects look better with the black background, while dark media looks better with the transparent background. The background setting does not effect the way the Layer appears in your Simulation.

Previewing a Sound Clip

Why: If you want to hear an audio file before adding it to your Simulation, you can use the Play button.

How:

1) Select the Sound Clip from the Content Panel to the right of the Preview Lens. Sound Clips are always .wav files.
2) Press the Play button located to the bottom left of the Preview Lens.

Tips: Be sure your speakers are on before listening to sound. Also keep in mind that unlike in Fire Studio 4, Sound Clips added to a Simulation will not have a graphical representation (icon)

located in the Viewing Area. The Sound Clip will appear as a Layer on the Window Layers Panel on the right and in the All Layers Panels on the left. You can select it there for editing.

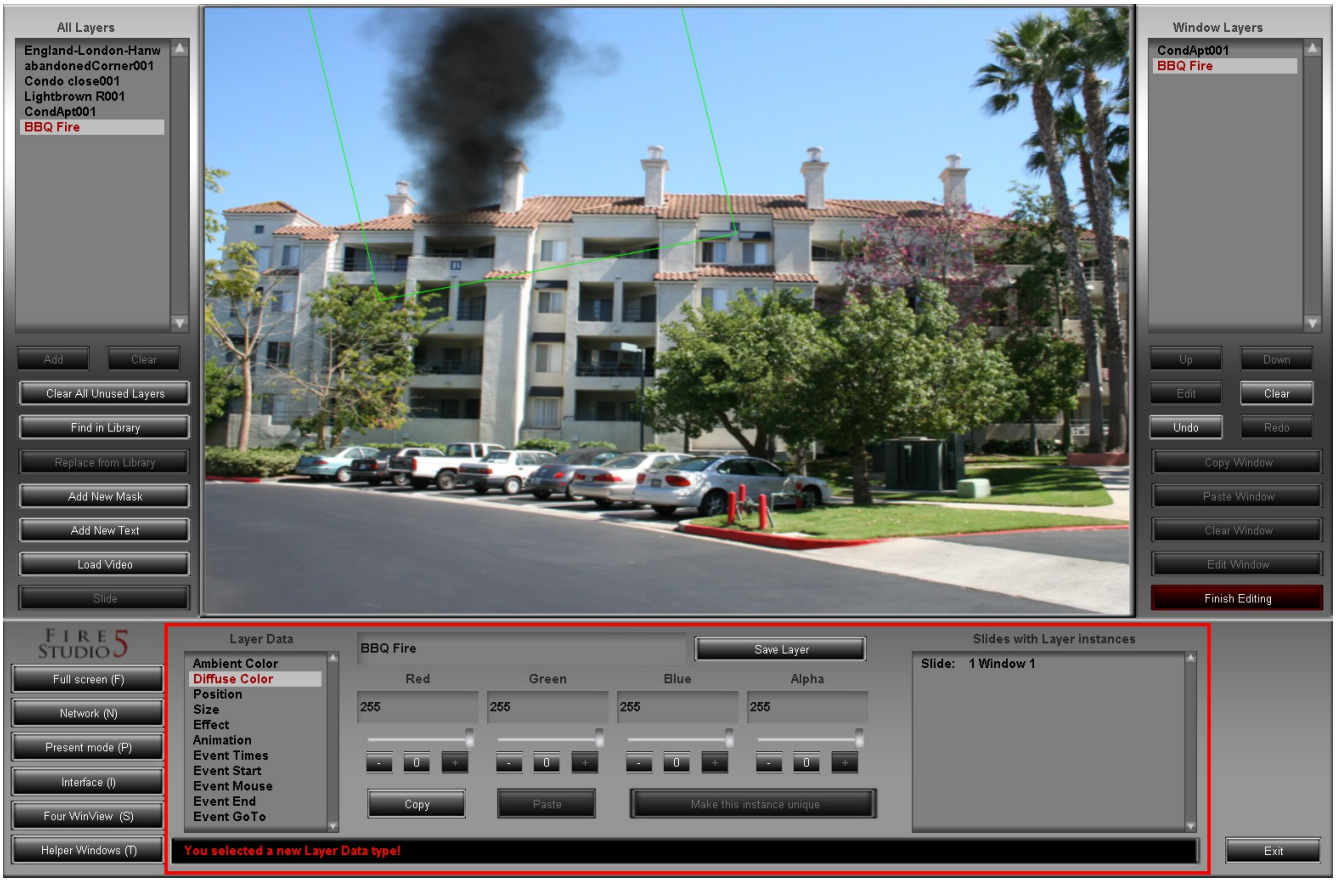
Organizing Your Libraries

Consider carefully how you will design your Libraries. One option would be to create Smoke, Fire, Clip Art, Background, and Sound Libraries, each of which contain ALL of the respective media you have. This is how the default Libraries included with Fire Studio 5 are organized. However, once a Library is Exported, it cannot be modified in any way. If you were to acquire new Fire, Smoke, Background, etc. media, you could not add it to these Libraries; you would need to delete them and then create new ones, Loading all the Layers as normal. However, using this method, you could easily keep Player systems updated simply by remaking Libraries of the same name and replacing the old ones on those Player systems.

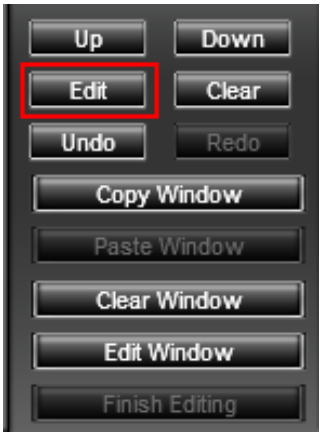
Libraries containing a lot of Layers will be very large when Exported. Since both the Instructor and Player editions of Fire Studio contain all of the basic Layers, it is not necessary to Export the default Layers.

If you have a collection of Clip Art, Videos, Sound Files, or other content that you use regularly, it might be a good idea to create a Library (or two) of those files, Export, and then load them onto all the systems that will be playing your Simulations. Instead of including a particular Smoke Layer in 5 Simulations, for example, you create the Library once, and all those 5 Simulations share it.

The Edit Layer Panel



To Edit a Layer, you merely need to select it, then click on the Edit button located on the right-side of the Main Console. This will bring up the Edit Layer Panel as highlighted above. When you are done editing the Layer, click on the Finish Editing button on the right-side of the Main Console, which will now be highlighted in red.



Naming a Layer

Why: Sometimes you may want to name your individual Layers for quick reference.

How:

1) Click on the default Layer name in the box to the left of the Save Layer button.
2) Edit the name.
3) Press Enter on the keyboard when you are finished. The Layer is now renamed.

Tips: When you have multiple Layers on the same Slide which are similar, it can be useful to name the Layers to keep track of them. You may also just want to have easily recognizable names listed out in the Window Layers or All Layers panel.

Saving a Layer

Why: If you've created a Layer you would like to bring into another Simulation, you can save it as a separate file.

How:

1) Click on the Save Layer button.
2) A navigation screen will appear to allow you to browse to the folder you want to save the Layer in.
3) Type in a name for your Layer.
4) Click on the Save button.

Tips: If you've created an interesting Layer that you think you'll want to use again in another Simulation, you should save it. Don't forget that you'll need to add it to one of your Libraries in order to access it however.

Copy

Why: The Copy command allows you to copy the values of a Layer so it may then be Pasted onto that of another.

How:

1) Navigate to the Layer Data of the Layer you want to copy.
2) Click on the Copy button.

Tips: You cannot Copy the values of one type of Layer Data and Paste it into the values of another. For example, Ambient Color cannot be pasted into Diffuse Color, only into Ambient Color.

Paste

Why: The Paste command allows you to paste a set of copied values into the same type of Layer you copied them from.

How:

1) Navigate to the Layer Data of the Layer you want to paste into.
2) Click on the Paste button.

Tips: You don't need to exit the Edit Layer panel in order to paste these values in a different Layer on the same Slide. You can select the Layer directly above and even change to Four Window View if you need to select a Layer in another Window.

Make this Instance Unique

Why: If you've created a Link Layer by copying an entire Slide, you may want to break the Link for some or even all of the Layers.

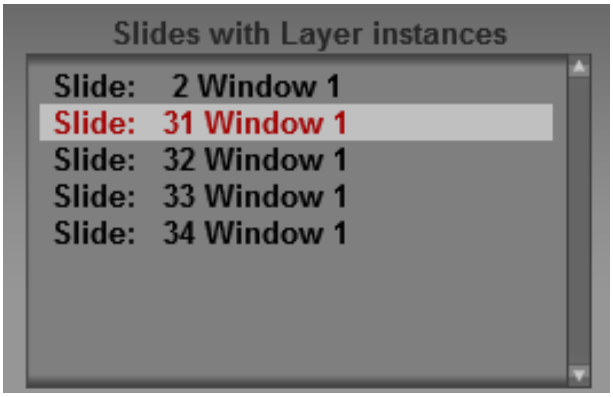
How:

1) When the Layer you want to make unique is selected, click on the *Make this Instance Unique* button. You will need to be in the Edit Layer panel to access this feature.

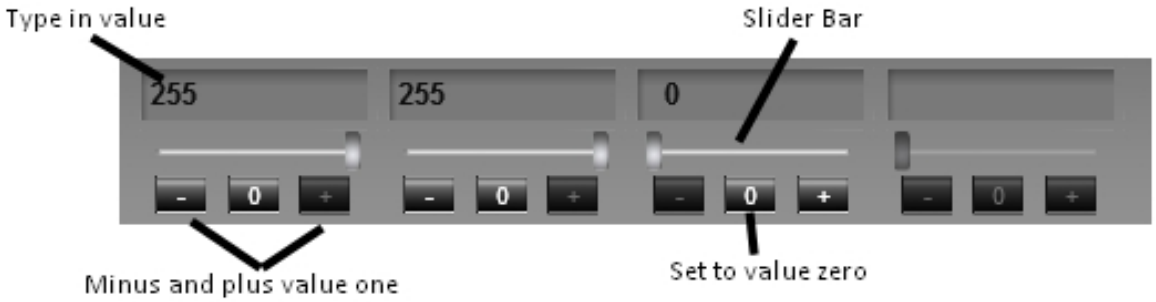
Tips: As with version 4/4.1, a Linked Layer is tied directly to any other Layer it is linked to. Adjusting the properties of one, will adjust the properties of all of them. Breaking the Link will make the Layer disconnected and adjustments can be made to it without affecting any others.

Slides with Layer instances

This panel shows the occurrences of the selected Layer in the entire Simulation. Only Linked Layers will appear more than once however. When using the Helper Windows, you can get a preview of the other Windows by clicking on the *instances* listed.



Adjusting Layer Data



For each category listed below, there are several properties that can be adjusted in the center of the panel. You can change these values using the Slider Bar located below them, clicking on the plus or minus to lower the values by increments of one, or in some cases, clicking on the value directly and typing in the new value. If you want to set a numerical value to zero, you can click on the o located between the plus and minus signs. Buttons will gray-out if the minimum or maximum value is currently set.

Refer to the section *Layer Data Settings Quick-Reference* later in this guide for the specific settings you should consider when creating fade-in and fade-out animations and click-able icons.

Ambient Color

What: Allows you to change the ambient color of the selected Layer.

Properties: *Red, Green, Blue.*

Red: Ambient red coloring. Lowering this value reduces the red in the Layer.

Green: Ambient green coloring. Lowering this value reduces the green in the Layer.

Blue: Ambient blue coloring. Lowering this value reduces the blue in the Layer.

Diffuse Color

What: Allows you to diffuse the color of the selected Layer.

Properties: *Red*, *Green*, *Blue*, *Alpha.*

Red: Diffuse red color.

Green: Diffuse green color.

Blue: Diffuse blue color.

Alpha: This property adjusts how clear the Layer is. Lowering the Alpha property will make the Layer fade out and appear translucent. In other programs this is sometimes referred to as *opacity*.

Text Color

What: Allow you to change the color of a Text Layer you have inserted.

Properties: *Red*, *Green*, *Blue.*

Red: Lowering this value reduces the red in the Layer.

Green: Lowering this value reduces the green in the Layer.

Blue: Lowering this value reduces the blue in the Layer.

Position

What: Allows you to set some of the positional properties and orientation of the Layer.

Properties: *Position X, Position Y, Rotation.*

Position X: Sets the X coordinate of the Layer within the Window, moving the Layer left and right.

Position Y: Sets the Y coordinate of the Layer within the Window, moving the Layer up and down.

Rotation: Rotates the Layer in a clockwise or counter-clockwise direction.

Size

What: Allows you to set the size properties of a Layer to make it bigger or smaller.

Properties: *Width, Height, Scale.*

Width: Expands or contracts the Layer making it wider or thinner.

Height: Expands or contracts the Layer making it taller or shorter.

Scale: Makes the Layer smaller or bigger as a whole.

Effect

What: This category provides additional modification options similar to Position and Size.

Properties: *Skew*, *Perspective*, *Horizontal Flip*, *Vertical Flip.*

Skew: Moves the bottom and top of the Layer in opposing directions along the X axis.

Perspective: Rotates the Layer around the Y-axis.
Horizontal Flip: Flips the Layer across the Y-axis (left/right).
Vertical Flip: Flips the Layer across the X-axis (up/down).

Animation

What: Allows you to set the speed of an animated Layer and whether it repeats or not.

Properties: *Anim. Loop*, *Anim. Speed.*

Anim. Loop: A yes or no value that determines if the Layer repeats its animation forever or plays just once.

Anim. Speed: Sets the speed at which the animation plays in frames per second. This can be set to 0 to make the Layer freeze or to a negative value to reverse the order in which the frames are displayed.

Point 1/Point 2/Point 3/Point 4

What: These are the four corner points for a Mask, which you can adjust in the Edit Layers panel instead of directly in the Viewing Area.

Properties: *Point X, Point Y.*

Point X: The X coordinate.

Point Y: The Y coordinate.

Sound

What: Allows you to set whether the sound repeats or plays just once, and how loud it will play.

Properties: *Loop, Volume.*

Loop: Set this value to Loop if you want it to repeat forever. Set it to No Loop if it should play only once.

Volume: Play at 100% volume or less.

Event Times

What: Allows you to set some of the time-based properties of the Layer such as a delayed start and fading. *Refer to the section Layer Data Settings Quick-Reference near the end of this manual for example settings.*

Properties: *Start Time, Fade In, Duration, Fade Out.*

Start Time: The length of time before the Layer appears or begins to appear. If set to 0, it will be visible as soon as this Slide is shown.

Fade In: The length of time it takes for the Layer to fade into the scene.

Duration: The amount of time the Layer remains before disappearing or beginning to fade out. If set to 0, it will remain indefinitely.

Fade Out: The length of time it takes for the Layer to fade out of the scene.

Event Start

What: Allows you to set a trigger to begin this Layer's Event Times. For example, you can set a key that when pressed will cause the Layer to appear. *Refer to the section Layer Data Settings Quick-Reference near the end of this manual for example settings.*

Properties: *Start Key.*

Start Key: Choose one of the number keys to use as a trigger. If set to Off, the Layer will begin its Event Times automatically upon entering the Slide. These numbers

correspond to the numbers on the keypad, not to the numbers above the letters on your keyboard.

Event Mouse

What: Allows you to setup the Layer to turn off (end) when the mouse is clicked on it. You will need to set this value to on if you plan to create Nav Icons to move through your scene or otherwise the mouse to trigger an action. *Refer to the section Layer Data Settings Quick-Reference near the end of this manual for example settings.*

Properties: *End on Mouse.*

End on Mouse: Set this to On to allow a mouse click on the Layer to turn it off.

Additional Notes: If you set a Duration in the Event Times, the Layer will still disappear when that period of time has passed. Also keep in mind that the click-able area includes everything the highlight box surrounds when you select the Layer. As an example, the trash bin has been enlarged in the sample picture to the right and it is easy to see that the green box includes some of the ground, house, and other parts of the Background within it. Clicking any of those small sections would trigger End on Mouse.

Event End

What: Allows you to set a keyboard trigger to end or turn off this Layer. If a Fade Out value is set, this key will cause the Layer to begin fading out. *Refer to the section Layer Data Settings Quick-Reference near the end of this manual for example settings.*

Properties: *End Key.*

End Key: Choose one of the number keys to use as a trigger. If set to Off, the Layer will disappear or fade out strictly based on the Event Times set. If no Duration is set and an End Key is entered, the Layer will remain indefinitely until the key is pressed. These numbers correspond to the numbers on the keypad, not to the numbers above the letters on your keyboard.

Event GoTo

What: Allows you to set certain actions to occur once the Layer has ended based on settings for the above Layer Data. *Refer to the section Layer Data Settings Quick-Reference near the end of this manual for example settings.*

Properties: *On End, Go to Slide, Window.*

On End: Choose one of the values here that corresponds to how you want the Simulation to react once the Layer has ended. Choices include:

- Off – Nothing happens once the Layer has ended. This is the default value.
- RestartSlide – All of the animations, timers, and sounds will reset and begin again.
- GoToNext – The Simulation will move to the next Slide in sequence.

- GoPrevious – The Simulation will move to the previous Slide in sequence.
- GoToSlide – The Simulation will jump to another Slide determined in the Go to Slide field.
- RestartLayer – Only this Layer is reset and begins to play again.

Go to Slide: If using the Go to Slide setting above, you will enter here the Slide that the Simulation will jump to once the Layer has ended.

Window: If you've set one of the above value to jump to another Slide, you can also set the particular Window it will jump to in that Slide. If set, the Slide will open in Single View on that Window. If set to Off, the Slide will open as you have saved it, either in Single View or Four Window View.

Editing Windows

To edit a Window, select the Window so it is highlighted in green, then click on the Edit Window button located at the right-side of the Main Console. This will bring up the Edit Window Panel at the bottom of the console. When you are done editing, click on the Finish Editing button, which will now be highlighted in red.

Clear Copy Buffer

Why: This command allows you to flush the data stored when you use the Copy Window button.

How:

1) While in the Edit Window Panel, open the Helper Windows view by clicking on the Helper Windows button on the bottom left of the console, or by pressing T.
2) If there is an imagine in the Copy Buffer window, the Clear Copy Buffer button will light up on the Edit Window panel.
3) Click the Clear Copy Buffer button to erase the imagery from the Copy Buffer.
4) Click OK to erase the data.

Tips: It is not necessary to clear the buffer before copying a different Window, which will simply overwrite what is already present.

Clear Animation

Why: To remove all the 2D camera settings you've setup with the current Window.

How:

1) While in the Edit Window panel, select the 2D Camera item in the Window Data panel.
2) If you have setup the camera to move, the Clear Animation button will become lit.
3) Click on the Clear Animation button.
4) A warning message will appear. Choose OK to erase the settings.

Tips: You can clear individual Key Frames using the Clear button located below the Frame Slider Bar.

Copy Animation

Why: To copy all the 2D camera settings you've setup with the current Window for the purpose of applying them to another Window.

How:

1) While in the Edit Window panel, select the 2D Camera item in the Window Data panel.
2) If you have setup the camera to move, the Copy Animation button will become lit.
3) Click on the Copy Animation button.

Tips: Keep in mind this will only paste the camera movement settings and key frames for a Window. It does not copy over media such as backgrounds, fire, smoke, etc.

Paste Animation

Why: This allows you to Paste copied settings for the 2D Camera into the currently selected Window.

How:

1) Select the Window you want to Paste the animation data to.
2) While in the Edit Window panel, select the 2D Camera item in the Window Data panel.
3) If you've copied the animation data already, the Paste Animation button will light up.
4) Click on Paste Animation to paste the copied settings.

Tips: If you Paste the data to the wrong Window, you can always use Clear Animation to remove it again.

Set Slide Duration

Why: This command allows you to set a time when the Slide will automatically progress to the next one. If Unlimited is shown, the same Slide will remain onscreen until manually changed or an Event Key triggers a change.

How:

1) Move the Frame Slider Bar until you reach the desired duration on the clock just below the Set Slide Duration button.
2) Click on Set Slide Duration.
3) The time will become green to indicate the end of the Slide Duration.

Tips: The Slide Duration, as the name implies, applies to the entire Slide, and not just the individual Window being edited.

Animated Data

What: Confirms the camera settings for your Window and will initiate the movements when in Author or Present Mode.

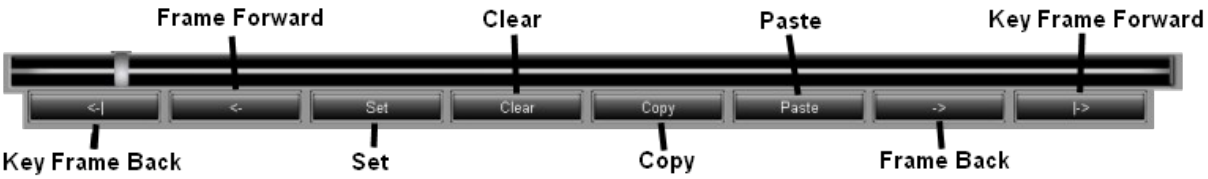
Hold Current Frame

What: Freezes the Window at a particular frame allowing you to place your Layers and make modifications. You will use this only when Animated Data is marked.

Full Time

What: Adjusts the Frame Slider Bar maximum value to the value you have set in Slide Duration. This makes it easier for you to move the Frame Slider Bar to the specific frame you desire.

Frame Slider Bar Commands



Frame Forward/Back : Advance one Frame forward or back.

Key Frame Forward/Back : Advance one Key Frame forward or back.

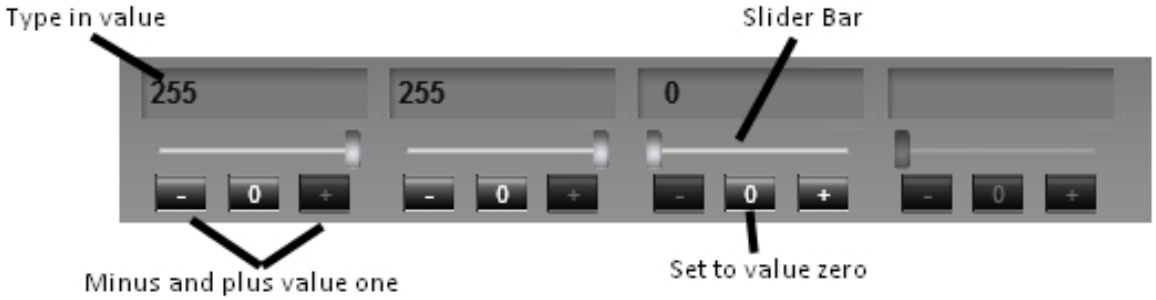
Set : Place a new Key Frame at the current Frame.

Clear : Remove one Key Frame from your Window. To use this feature, you must move the Frame Slider Bar to the Key Frame you want to Clear.

Copy : Copy a single Key Frame for the purpose of pasting it at another point in the Duration of the Slide. You can only Copy at a point where you've set a Key Frame.

Paste : Paste a single Key Frame you have copied.

Adjusting Window Data



For each category listed below, there are several properties that can be adjusted in the center of the panel. You can change these values using the Slider Bar located below them, clicking on the plus or minus to lower the values by increments of one, or in some cases, clicking on the value directly and typing in the new value. If you want to set a numerical value to zero, you can click on the o located between the plus and minus signs. Buttons will gray-out if the minimum or maximum value is currently set.

Ambient Light

What: Allows you to change the ambient light of the selected Window.

Properties: *Red, Green, Blue.*

Red: Ambient red coloring. Lowering this value reduces the red in the Layer.

Green: Ambient green coloring. Lowering this value reduces the green in the Layer.

Blue: Ambient blue coloring. Lowering this value reduces the blue in the Layer.

2D Camera

What: The 2D camera feature allows you to zoom in and out of specified areas of your Window as well as pan the scene in any direction to create the effect of a moving camera.

Properties: *X, Y, Zoom.*

X: Controls the position of the Viewable Area on the horizontal or X-axis. You can make the camera move left or right when this setting is used in conjunction with Key Frames.

Y: Controls the position of the Viewable Area on the vertical or Y-axis. You can make the camera move up or down when this setting is used in conjunction with Key Frames.

Zoom: Causes the camera to zoom into the Window. You can be zoomed in from the start, or have the camera zoom over the course of the scenario playback.

How to Pan/Zoom the Camera on your Window

1) Select the Window you want to apply the camera effects to and click on the Edit Window button on the right-side of the main console.
2) Click on 2D Camera in the Window Data panel to highlight it and give you access to modify those properties.
3) By default, the image on the screen is centered and fills the entire Viewing Space. You will be able to move that image in a horizontal and/or vertical direction, as well as zoom in on any part of it in the steps that follow. Consider how you want your camera to move and what you want to show.
4) If you want to start your scene with the image already zoomed or moved, adjust X, Y, or Zoom to where you want it, and then click Set. Do not adjust the Frame Slider Bar as it should be on

Frame 0. If you want the scene to begin as is, you do not need to adjust anything.

5) Now adjust your Frame Slider to the Frame where you'd like your next adjustment to be.
6) Adjust the X, Y, and Zoom to what you want them to be at this Frame.
7) Click Set.
8) Between the previous Key Frame (or Frame 0 if you haven't set any yet) and the one you've just set, the camera will move to reach the new setting (location) by the time the Slide has reached this Frame during playback.
9) Click on the Animated Data box to turn the camera on. Camera movement will be displayed in both Author and Present Mode.

Interpreting Colors

Frames

Red: You are viewing a special Frame in the Slide. This could either be Frame 0 (special because it is the starting Frame) or a Frame where you have set a Key Frame.

Green: You are viewing at other non-special Frame in the Slide.

Slide Clock

Orange: A Slide Duration has not been set.

Yellow: A Slide Duration has been set and you are currently viewing a Frame up until that point.

Green: A Slide Duration has been set and you are currently viewing the final Frame.

Red: A Slide Duration has been set and you are currently viewing Frames that come after the Duration. The only modification you can make to these Frames would be to set a new Slide Duration.

Using Masks in your Simulation

What is a Mask?

Simply put, a Mask is exactly what you know it to be: something used to cover or hide something else. In Fire Studio, you can use a mask to create the illusion of something being located behind something else. You can have flames reaching up from behind a house, or a column of smoke venting from a hole on the back of an industrial plant, for example. As your background layer is in 2D, it is not possible to layer animations behind the objects in it. Or is it?

Try to imagine two completely identical photographs placed one on top of the other in the exact same position. Now imagine that you start to cut away bits of the top photo. As you do, the image from the bottom photo shows through. Because the two are identical in every way, you won't even notice any difference as you cut away the top one because the exact piece you cut away is now showing through from the bottom photo. In fact, you might not even realize there are two photos there.

Now imagine that you placed a coin between these two photos. Without any changes to the top photo, the coin would be hidden. However, as you start to cut away the top photo, pieces of the coin are revealed. Eventually, it appears as though part of the coin is sticking out from the image in the photo.

This is the concept behind Masks in Fire Studio. You will be able to place fire, smoke, or any other

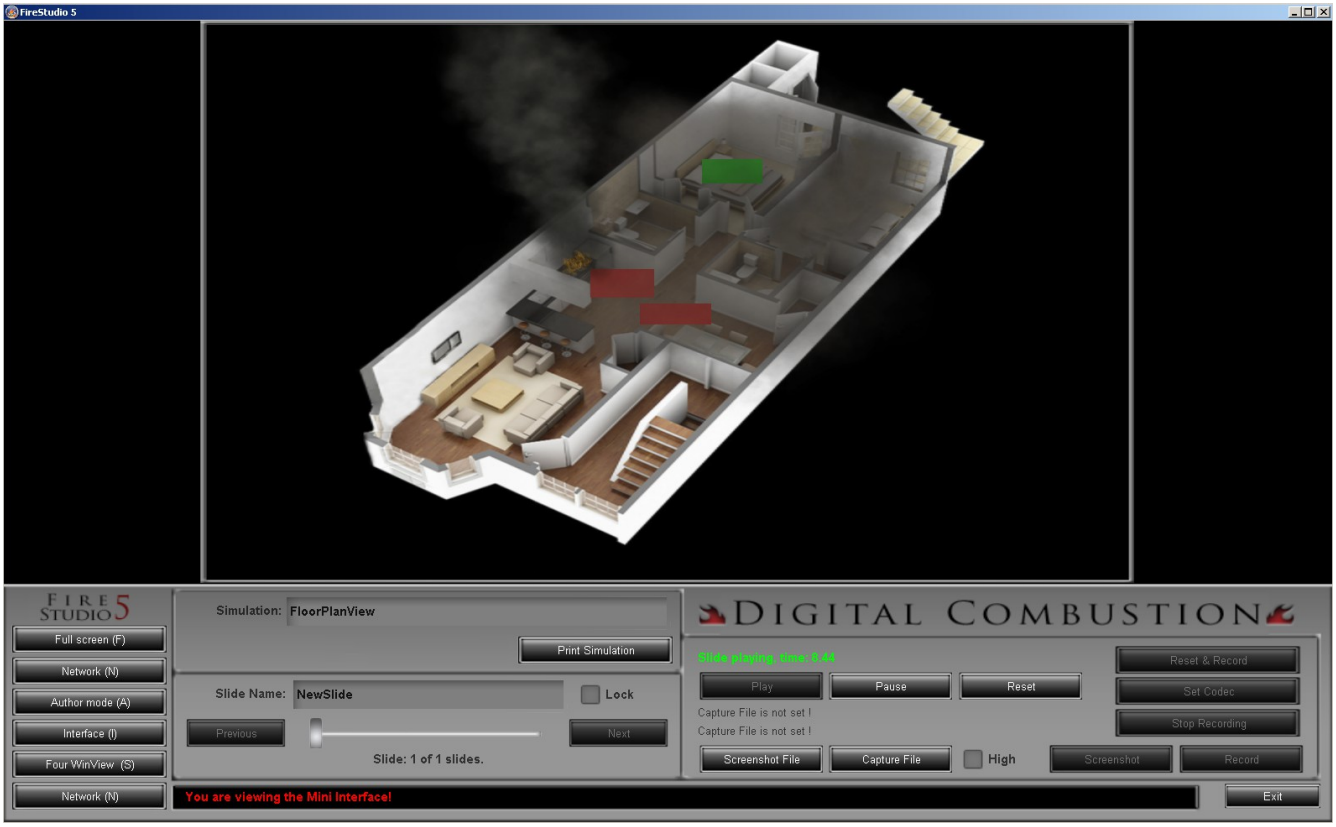
object on your Background Image, and then lay that same Background Image on top to hide the portions of the object that would be behind the structure. Let's take a look at an example as we learn just how to create a mask in Fire Studio 5.

How to Use a Mask

1) Prepare for creating a Mask by inserting a Background Layer and placing several animations over the edge of the structure. The portion of the animation that goes beyond the edge will be what you will see once we place the mask.
2) Next click on the Add New Mask button located on the left side of the Main Console. A green box will appear on your scene. Referring to the analogy earlier, this box represents the top "photo" that is being placed on top of your scene. It is an exact duplicate of your Background Layer, but only the portion within the green lines will cover the animations behind it.
3) If you look closely, you'll notice a small block on each corner. These are the points you will drag to set the size and location of the Mask. Left-click and hold the mouse button on one of the corners to move it. Adjust the shape and size to cover the portion of the animation that should be hidden by the structure. You can only form the Mask into a four point shape, so if you need to mask a complicated edge, you'll need to use additional Masks.
4) A Mask is like any other layer in Fire Studio and will appear in both the All Layers Panel and Window Layers Panel. As like any Layer, a Mask will only cover Layers that are below it (listed prior to the Mask in the Window Layers panel).

Present Mode

When changing to Present Mode, the interface will initially be hidden. Press `I` on your keyboard to make it visible. The Present Mode Interface is also referred to as the Present Mode Panel.



Print Simulation

Why: If need to make a quick-reference table of contents, you can use the Print Simulation command to generate an HTML document of your Simulation.

How:

1) With your Simulation loaded, click on the Print Simulation button.
2) Your HTML viewer (usually your web browser) will automatically open up the file.
3) With your browser open, you can go into the File menu and Save the page, or print directly to your printer.

Tips: You can modify an HTML file using most word processing programs, such as Microsoft Word or Open Office. However, if you want to make a more comprehensive Simulation guide, or don't care for working in the HTML format, you can import the photos into your document one by one as images, and create your guide from the ground up. Even if you don't use the HTML file generated by the Print Simulation command, once you Save the page in your browser, it will create a folder that contains screenshots of your *entire* Simulation. These BMP files can then be imported as mentioned above.

Previous

Why: Use this button to step back one Slide.

How:

1) Click on the Previous button. It will only be lit if a Slide exists before the current one.

Tips: You can also use the back arrow on your keyboard.

Next

Why: Use this button to step forward one Slide.

How:

1) Click on the Next button. It will only be lit if a Slide exists after the current one.

Tips: You can also use the forward arrow on your keyboard.

The Lock Box

See below.

Moving to a Slide without Viewing those In-between

Why: If you're using the Slider Bar to skip to a Slide out of sequence, you might not want to reveal the Slides in-between to your viewers. This is useful when you want a scene to change according to participant feedback; change to a scene you've already created ahead of time.

How:

1) Click on the Lock box to place a mark. This will keep the current view while you move the Slider Bar.
2) Move the Slider Bar until the indicator below reaches the Slide you want to change to.
3) Click on the Lock box again to remove the mark. Doing so will immediately change to that Slide.

Tips: Instead of moving the Slider Bar, you could also use the keyboard shortcut by pressing J followed by the Slide number you want to skip to, and then pressing Enter. If the Lock box is marked, the Slide won't be shown until you remove the mark.

Play

Why: Press the Play button to resume a Slide that is paused.

How:

1) Click on the Play button when the Slide is paused.

Tips: The Play button will only be lit if the Slide/Simulation is paused.

Pause

Why: Sometimes you might need to Pause a scene.

How:

1) Click on the Pause button when you need to freeze the Frame.

Tips: Pausing can be useful if you need to discuss the scene in more detail with your audience and don't want the Slide to auto-advance or camera movement to occur just yet.

Reset

Why: If you need a Slide to start over again (as if you had just changed to it), then you will need to use Reset.

How:

1) While viewing the Slide or Window you want to restart, click on the Reset button.

Tips: You can use the Reset button as many times as needed. Using Reset will begin all animations again, including fade-ins or fade-outs, video clip-art, and so on.

Screenshot File

Why: Prior to capturing a still image from your Simulation, you need to tell Fire Studio what to name it.

How:

1) Click on the Screenshot File button. This filename will persist for your Simulation until you change it or exit the program.
2) Navigate to the folder where you want to save the Screenshot(s) and type in a name for the image file.
3) Click Save.
4) The path and file name will appear just above the Screenshot File button.

Tips: You can set any name you like, but Fire Studio will automatically add a number sequence at the end of the file name, which will progress in sequence as you take screen captures. In this way, you don't need to name the files each time to avoid overwriting, and you can take as many screen-shots as you like.

Screenshot

Why: This command will create still-image shots of your currently selected Window, which can then be used in any number of ways.

How:

1) You will need to set a Screenshot File first. If you have not, refer to the section above.
2) Select the Window you want to create a still-image of.
3) Click on the Screenshot button.
4) A BMP image file is automatically saved in the location you chose when creating the

Screenshot File and the filename moves up one in the sequence (000 becomes 001, etc.)

Tips: The Screenshot feature in Fire Studio 5 can provide a still image of only one Window at a time. If you require a Screenshot of the Four Window View, you'll need to use a 3rd party capture application. The easiest is simply to use the command built into Microsoft Windows by pressing the PrtScn (Print Screen) button on your keyboard. This will take a still image of the entire desktop, but you will need to go into some other application and Paste the image from the copy buffer. Keep in mind this will be an image of the entire desktop, so you should maximize the size of Fire Studio and hide the Interface before using it. In the end, you may still want to edit the image using photo editing software such as Adobe Photoshop or our recommended Paint.net.

Capture File

Why: Prior to capturing a video from your Simulation, you need to tell Fire Studio what to name it and where it will be saved.

How:

1) Click on the Capture File button. This filename will persist for your Simulation until you change it or exit the program.
2) Navigate to the folder where you want to save the Video(s) and type in a name for the file.
3) Click Save.
4) The path and file name will appear just above the Capture File button.

Tips: You can set any name you like, but Fire Studio will automatically add a number sequence at the end of the file name, which will progress in sequence as you create videos. In this way, you don't need to name the files each time to avoid overwriting, and you can take as many videos.

Set Codec

Why: When creating a video file, you must tell the system what kind of Codec to use. Refer to the Glossary for information on what Codecs are.

How:

1) Prior to choosing a Codec you will need to set the Capture File using the steps in the section above. When this is done, the Set Codec button will light up.
2) Click on the Set Codec button.
3) The Video Compression interface will appear. Use the drop-down menu to choose a Codec.
4) Most Codecs have different options to configure them, but only do so if you are familiar with the settings. You can refer to the Internet to find out details on these settings. When you are ready to proceed, click Ok.
5) With a Codec chosen, the two recording buttons will light up. Refer to the later sections for the steps on starting the recording process.

Tips: The choice of Codecs available to you will depend on what you've installed on your system. The default Codecs included with Microsoft Windows are very basic and may not provide the performance or quality you desire in your videos. Your best solution will be to obtain Codecs from the Internet and install them on your system. We highly recommend the K-Lite Mega Codec Pack 7.0.0 as it includes quite a few Codecs for you to try. Users have reported good success with the Xvid and Divx Codecs particularly.

Using the Full Frames (Uncompressed) option can provide high quality video, but the file size generated becomes very large, very fast. There are excellent video processing applications on the Internet that can convert your large video into a smaller one using the Codecs on your system. If you find that capturing a video in Fire Studio using a Codec is too taxing on your system, one option may be to use Full Frames, then compress the video with a 3rd party

program separately. However, if your Full Frames video is *TOO* large, it will be completely unmanageable in *any* program you use. Finally, keep in mind that a hard disk drive formatted to FAT16 or FAT32 won't even recognize a file larger than 4 GB.

As with any Codec choice, you should test the recording using a short interval of time to sample what the results will be. If the video is choppy or the timing is off, you may need to choose a different Codec.

Reset & Record

Why: If you need to Reset a Slide before beginning the recording process, you will use the Reset & Record button.

How:

1) Navigate to the Slide where you want to begin recording.
2) Click on Reset & Record.
3) The Slide will start from Frame 0 and the video will begin to capture. You will notice the green Slide Playing Time indicator change to red and now read Recording AVI file.
4) You can now advance your Simulation using any means to change Slides or allow it to play on its own if you have Durations set.
5) Click on Stop Recording to end video capture.

Tips: Before recording, it is a good idea to browse through your Simulation in Present Mode to enable Fire Studio the time to load it into memory. We also recommend this before you show your Simulation to students or training candidates, to avoid choppy performance of the Simulation.

The Reset & Record command will be necessary if you have animations playing that you to

start from the beginning for the video. However, if you intend to capture only part of a Window's playback, after camera movement or animations have been played, you'll need to use the Record button.

Video capture in Fire Studio 5 will only capture a single Window in each Slide. You cannot record a Four Window View. If you need a video to show all four Windows, you'll need to use a 3rd party application such as Camtasia, Fraps, or Camstudio.

Record

Why: The Record button will initiate the video capture process beginning from the current Frame being displayed.

How:

1) Navigate to the Slide where you want to begin recording.
2) Click on Reset & Record.
3) The Slide will start from Frame 0 and the video will begin to capture. You will notice the green Slide Playing Time indicator change to red and now read Recording AVI file.
4) You can now advance your Simulation using any means to change Slides or allow it to play on its own if you have Durations set.
5) Click on Stop Recording to end video capture.

Tips: Before recording, it is a good idea to browse through your Simulation in Present Mode to enable Fire Studio the time to load it into memory. We also recommend this before you show your Simulation to students or training candidates, to avoid choppy performance of the Simulation.

The Record command will be necessary if you want to begin recording a Window that is

already in the middle of playback. If you need to Reset the Window before recording, use the Reset & Record button.

Video capture in Fire Studio 5 will only capture a single Window in each Slide. You cannot record a Four Window View. If you need a video to show all four Windows, you'll need to use a 3rd party application such as Camtasia, Fraps, or Camstudio.

Stop Recording

Why: During the video capture process, when you're ready to stop recording, you will click on the Stop Recording button.

How:

1) When the video capture process is underway, the Stop Recording button will be lit.
2) Click on Stop Recording to end the video capture.

Tips: The Slide Playing Time indicator will return to green when you have stopped recording. If you want to create another video, you don't need to repeat all the steps. The Codec is already set and the capture file name will change to the next number in sequence. Just change to the Window or Slide you want to begin your video capture, and click one of the Record buttons.

The High Box

Why: Video can be captured in the default lower setting, or in a slightly higher resolution format using the High Box.

How:

1) If you want to capture a video file at the higher resolution, click on the High box to place a mark just before using one of the Record commands.

Tips: The more intense your Simulation, the more powerful computer is required to adequately capture in real time. You will need to experiment with your Simulation, Codecs, and capture settings to find a solid balance that delivers video of the quality you desire. Fire Studio is meant to provide a basic system for capturing video, but as mentioned above, if you require something more advanced, it may be worth your while to investigate a 3rd party program such as Camtasia, Fraps, or Camstudio, the latter of which is free.

Mini Panel

Why: Sometimes you don't need the full Present Mode Panel and rather have a larger display, but retain basic controls visibly.

How:

1) Press Tab on the keyboard to hide or unhide the Mini Panel. This option is only available when you do not have the regular Present Mode Panel up.

Tips: Controls on the Mini Panel work exactly the way they do on the Present Mode Panel. In fact, if you look closely, you can see that the Mini Panel is nothing more than one particular section of the full Present Mode Panel.

Fire Studio Miscellany

Importing a Fire Studio 4/4.1 Simulation into Fire Studio 5

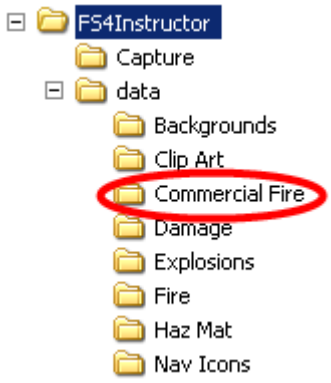
Why: If you have Simulations created in Fire Studio 4/4.1, you can import them to use in Fire Studio 5. You cannot do the reverse, however, and import Fire Studio 5 Simulations into Fire Studio 4/4.1.

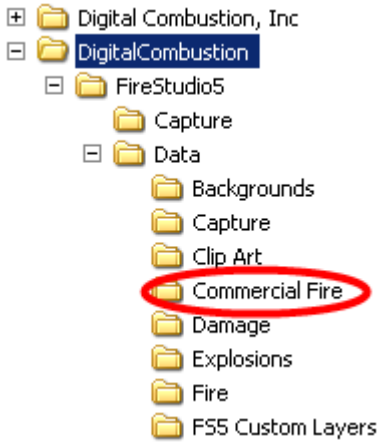
How:

1) Export your Fire Studio 4/4.1 Simulation using the instructions listed in the Fire Studio 4 manual. You will have a .dcs and .dcl file for your Simulation if you've done this correctly. Keep in mind that any media set to *Read-Only* will NOT be included in the .dcl file.
2) Copy the two files to the Fire Studio 5 folder under *Data*, located by default at *C:\Program Files\DigitalCombustion\FireStudio5\Data*. You can create your own subfolder within *Data* or place them in the *Simulations* folder that should already be there.
3) Load the Simulation as normal (refer to *Loading an Existing Simulation* for instructions) from within Fire Studio 5. You will be selecting the .dcs file to load. It is important that the .dcs and .dcl files are located in the same folder for the Simulation to load correctly.

Tips: Keep in mind the guidelines of exporting Simulations in version 4. Most notably, only those media files NOT set as Read-Only will be included in the .dcl file when you do Export Simulation. Just like in version 4/4.1, any white backgrounds or boxes that appear in your Simulation are an indication that Fire Studio can't locate that particular media and it probably did not get exported due to being set as Read-Only. You should be able to track down the name of the missing Layer when the Simulation is open and then investigate that file from the originating computer or folder to see if it is set as Read-Only. If so, uncheck that property, and then repeat the steps above.

When you load an imported Simulation in this fashion, the custom media included in the .dcl file will be extracted to a location parallel to where it was in your Fire Studio 4 directory. For example, if you had a custom folder named *Commercial Fire* where your backgrounds for this Simulation were loaded, then Fire Studio will create a *Commercial Fire* folder in *Data* and place your background photos inside. You can then use these images in other Simulations.





Sending & Receiving Text Messages

The Instructor Edition is capable of all the functions found in the Player Edition, which includes sending and receiving text messages from Communication Link. Messaging will appear different and have separate functionality based upon the mode you are in or panel you are currently viewing.

In most cases, messages will be sent to participants viewing Simulations in the Player Edition of Fire Studio. The Player Edition will look and act like Present Mode in the Instructor Edition.

Messaging with the Interface Shown

When you have the Network Panel open, messaging will appear as in the screenshot above. You can access the Network Panel while the Interface is shown in either Author or Present Mode, by clicking on the Network button, or pressing N on the keyboard.

Incoming messages will be displayed in the main text area with the name of the originator at the left and outgoing messages-- those sent by the person using this system-- will also be displayed, but without an identifying marker. If you want to scroll up to read previous messages, you can use the scroll bar at the right.

To send a message, click in the text field between the Network and Send buttons, type your message, then press Enter, or click on the Send button.

The messaging text will not be lost if you hide the Network Panel and you will continue to receive messages "silently."

Incoming Messages in Present Mode (no Interface)

When a message is received while in Present Mode with a hidden Interface, a mini text box will appear at the bottom of the screen as pictured above. Unlike messaging while viewing the Network

Panel, you cannot directly reply through this mini box. You can either click Hide to remove this mini box and continue with the Interface hidden, or you can click the Network button (or press N) and bring up the Network Panel with the Interface. Of course, you can also leave the message box up and new incoming messages will be displayed, one line at a time.

Color Chart

The following color settings can be used as a guideline for setting Text color in your Simulations. Ambient and Diffuse Color settings work differently, starting at various base colors, so while this chart can be used as a rough guideline, the results likely will not be exact.

Color	Red	Green	Blue
Red	255	0	0
Green	0	255	0
Blue	0	0	255
Yellow	255	255	0
Turquoise	0	255	255
Violet	255	0	255
Orange	255	125	0
Purple	125	0	255
Brown	150	100	0
Gray	125	125	125
Black	0	0	0

Layer Data Settings Quick-Reference

Automatic Fade-in (Immediate)

Why: When you want an animation or clip art to layer fade into the scene as soon as the Slide appears, you will need to consider the following properties:

Event Times

Start Time : Leave this at 0 to begin the fade-in right away.

Fade In : You will need to set this value to at least 1, but for a slower fade-in, increase the number to at least 5. The higher the number, the slower the fade-in.

Duration : Leave this at 0 to keep the Layer present for the entire duration of this Slide.

Fade Out : Leave this at 0 if your Duration is set to 0. Otherwise refer to the section below on fading out of Layers.

Automatic Fade-in (Delayed)

Why: When you want an animation or clip art layer to fade into the scene several seconds after the scene first appears, you will need to consider the following properties:

Event Times

Start Time : How long do you want the scene to be on screen before the animation or clip art layer begins to fade in?

Fade In : You will need to set this value to at least 1, but for a slower fade-in, increase the number to at least 5. The higher the number, the slower the fade-in.

Duration : Leave this at 0 to keep the Layer present for the entire duration of this Slide.

Fade Out : Leave this at 0 if your Duration is set to 0. Otherwise refer to the section below on fading out of Layers.

Automatic Fade Out

Why: When you want an animation or clip art layer to fade out of the scene, you will need to consider the following properties:

Event Times

Duration : How long do you want the animation or object to last on the screen? This value determines how long it will remain before the fade-out procedure begins. The larger the value, the longer it will be on the screen before fading out.

Fade Out : You will need to set this value to at least 1, but for a slower fade-out, increase the number to at least 5. The higher the number, the slower the fade-out.

Click Layer to Change Slide (Creating Navigation Buttons)

Why: When you want to be able to click on an animation or clip art layer to change the slide, you will need to consider the following properties:

Event Mouse

End on Mouse : Set this value to *On*.

Event GoTo

On End : Set this value to *GoToSlide* if you want to jump to another Slide in the Simulation. *GoToNext* can be used if you intend to change to the next slide in the sequence. GoPrevious can be used if you intend to jump back to the previous Slide.

Go to Slide : Set this value to the slide you wish to change to. If you use *GoToNext* or *GoPrevious* you won't need to set a value here.

Window : If you want to change to a specific Window of the Slide, set the value here.

Show/Fade-in a Layer with Keyboard Shortcut

Why: When you want an animation or clip art layer to begin hidden and then appear by pressing a key on the keyboard, you will need to consider the following properties:

Event Start

Start Key : Set this value to the key you want to use to turn on the animation or object layer.

Event Times

Start Time : Leave this at 0 to begin the fade-in or have the Layer appear immediately when you press the Start Key.

Fade In : Leave this at 0 if you want the Layer to appear without a fade-in. Otherwise set a value. The higher the number, the slower the fade-in.

Duration : Leave this at 0 to keep the Layer present for the entire duration of this Slide.

Fade Out : Leave this at 0 if your Duration is set to 0.

Hide/Fade-out a Layer with Keyboard Shortcut

Why: When you want to make an animation or clip art layer disappear by pressing a key on the keyboard, you will need to consider the following properties:

Event End

End Key : Set this value to the key you want to use to turn off the animation or object layer. No other changes are needed if you want it to disappear immediately.

Event Times

Fade Out : If you want the Layer to fade-out, set a time here. The higher the number, the longer it will take the Layer to fade-out.

File Types

.avi	Audio Video Interleave file is a container format for video and audio. Importing video into Fire Studio requires the video to be a .avi file. Exporting Simulations to video will create an .avi movie of the Simulation.
.dca	Database Content Animation file that represents an animated Layer such as Fire or Smoke.
.dcl	Database Content Library file in version 4/4.1 that contained actual media such as Backgrounds, Fire, Smoke, etc. Version 5 will not create .dcl files, but can read them from a version 4/4.1 Exported Simulation along with its .dcs.
.dcs	Database Content Source file that contains information about a Simulation. This file has all the settings and logistical data for the Simulation, but does not contain any media.
.htm	HyperText Markup Language is the most common format for webpages and sometimes email. In Fire Studio 5, the Print Simulation feature will create an HTML file from your Simulation, which can be used as a guide for instruction.
.jpg	JPEG (Joint Photographic Experts Group) is a format for still images and the recommended format for Background photos.
.lbr	Library file that may or may not contain specific media. Before Exporting a Library, the .lbr file will only point to files on your computer.

	Once a Library is Exported, the Layers it points to will be wrapped into the .lbr file and locked.
.tga	Targa is a format for still images and the required format for clip art.
.wav	Waveform Audio File Format that contains sound. Sound clips used in Fire Studio 5 must be .wav files.

Glossary

All Layers Panel	Area on the top left of the control panel that lists all of the layers created in this simulation. The All Layers Panel can be used to duplicate layers already created in the simulation or delete them. In version 4/4.1, this panel was referred to as the Global Layers Panel.
Author Mode	Author Mode is where you will access the main console of Fire Studio. When designing simulations, creating Libraries, or doing any kind of editing, saving, or exporting, you must be in Author Mode. Fire Studio 4 and 5 Player Editions do not have an Author Mode.
Background	Image or video used as a base within a window. All other media (excluding sound) stack on top of the Background. Unlike other Layers, the Background cannot be moved within a stack of Layers; it will always be on the bottom.
Background Image	See *Background.*

Background Layer	See *Background.*
Codec (Video)	A type of driver or mini-program that controls the compression and decompression of data (in this case video). Nearly all movies in digital format are compressed using some type of video and audio codec. Users who plan to import or export AVI videos will need to become familiar with what a codec is and be aware of their involvement in the video process. Some suggested video codecs for exporting include the Xvid and Divx®codecs. Full Frames (Uncompressed) can be used for low-res videos, but a hi-res video will create too large of a file to be manageable.
File Panel	In version 4/4.1, clicking on the File button in the top-left of the main console would bring up the File Panel. In version 5, you will save, load, export, and access other Slide options from the Slide Panel.
Four Window View	Setting where all 4 windows of a Slide are viewable in the Viewing Area. This view is great for showing several angles of an incident or just showing several pictures at one time. You can choose whether the Slide will remain in this view during Present Mode, or simply show only one of the four Windows.
Global Layers Panel	See *All Layers Panel.*
HTML	Hyper Text Markup Language: the language of web pages. HTML files are what your browser opens when going to a web page.
Layer	Media that has been inserted into a simulation and becomes stackable. Animation and clip art layers all stack in varying order on top of the Background. Layers can also be referred to as *Media* or *Content*.

Linked Layer	A layer that is connected to another layer of the exact same type, appearance, and position, in another slide of the Simulation. A Linked Layer will be highlighted in a red box when selected versus a green box when not linked. Unlike in version 4, you can only create a Linked Layer in version 5 by creating a copy of a Slide.
Layer Order	The positioning of the layers in your windows. All layers are stacked in a changeable order. A layer on top of another can be placed in front of that layer in the window.
Layer Properties Panel	In version 4/4.1, this panel displayed all aspects of the selected layer. All of the properties listed could be changed via this panel. In version 5, these properties can be accessed in the Edit menu.
Library	A custom collection of any type of content. Loading a Library allows the content of that Library to be accessed for creating a Simulation.
Library Panel	Clicking on the Library button brings up the Library Panel. Here you will create, load, or export Libraries. You will also add media to your simulations from the Library Panel.
Mask	A layer used to hide other layers in a scene, generally with the intent of making those layers appear as though they are behind other objects in the photo.
Media	Name sometimes used to refer to a group of materials such as clip art, video, sound, or images that can be imported into Fire Studio. Media will generally be referred to as Layers once it has been added to a Library or Simulation, but most people use the names interchangeably.

Media Panel	In Fire Studio 4, the Media Panel displayed all of the possible content you could add to your Simulation, showing all relevant files in the Data folder. In Fire Studio 5, the Media Panel displays the Library Contents of the selected Library. You can select Media from this list to add to your Simulation just as in version 4.
Present Mode	Present Mode is where you will actually be using your Simulation. When you change to Present Mode from Author Mode the design console will be removed making the Viewing Area larger. Slide timers and Layer Events will become active, and you won't be able to make changes to the Simulation.
Preview Lens	Camera Lens-like image on the bottom and center of the main console while in the Library Panel that displays a preview of the Layer you have selected in the Library Content Panel.
Simulation	A Simulation is one entire project consisting of a number of slides. For most people, a Simulation will represent an entire incident, possibly with multiple views and outcomes. A Simulation may also represent one view of an incident and be used with other Simulations in more complex training scenarios, most easily facilitated with Digital Combustion's network software, Communication Link.
Single Window View	Setting where only 1 window is viewable. In Single Window View, the one window fills all of the Viewing Area. Use this when taking screen captures of individual windows or if you only want to show one window at a time. You can switch between Single Window View and Four Window View by clicking on the *Four Win View* button.

Slide	One scene in your simulation will occur on one Slide and each Slide will include 1 or 4 windows. The current and total # of Slides will appear at the bottom of the main Control Panel while viewing the Slide Panel and also on the Mini-Console.
Slider Bar	General term for a toggle that can be slid left/right or up/down. There are two main Slider Bars in Fire Studio 5: to move between Slides on the Slide Panel and to move through Frames in the Edit Window Panel.
Slide Panel	The default panel that will be in view when you launch Fire Studio 5. Here you can Save, Load, name or Export your Simulation, as well as Copy, Move, Clear, and Create new Slides. You can also Hide/Unhide any of the four Windows for the current Slide. Refer to the Slide Panel section in this manual for complete details.
Step Back	Terminology meaning to move to the previous slide.
Step Forward	Terminology meaning to move to the next slide.
Unique Layer	A layer that is not linked to another layer and can be modified without changes carrying over to another layer. It will be highlighted with a green box when selected.
Vertical Sync	Vertical Sync limits the refresh rate of your video card to that of the monitor or TV, essentially slowing it down so the display device can keep up. This feature is really only useful if you're using a projector or old tube (CRT) type monitor to display your image.
Viewing Area	Total space on the screen where you can view your Simulation. The Viewing Area is composed of 1 or 4 windows and will be expanded when

consoles are removed, whether in Author or Present Mode.

Window — Each Slide has four Windows to work with. By default, you may only see Window 1. But pressing the Four Win View button or selecting one of the Window bubbles on the right side of the Slide Panel will allow you to access the other Windows. Typically, Windows are used to show different sides of a structure at the same point in time, or to show information or maps of the area. Users will place Layers within a Window to create their Simulations.

Window Layers Panel — Area on the top right of the Control Panel that lists all of the Layers within the selected Window. In version 4/4.1, this panel was located at the bottom left.

Windowed Mode — In version 4/4.1, users had to choose between running in Full Screen or in a Window. With Fire Studio 5, users can resize the program window to whatever size they wish, including full screen, all without exiting the program.

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Technical Support

You can contact us for technical support 5 days a week during regular business hours at our toll free number 1-800-884-8821.

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Be sure to include your name, contact information, product version, and a description of the problem if you are sending a technical support related email.

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Visit our online forums to share tips, ideas, and media with fellow Fire Studio users!