



PDPLAYER

USER'S MANUAL

THIS MANUAL DESCRIBES PDPLAYER VERSION 1.0.4.

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I. Introduction

I.1. Using This Manual

This manual is designed as a comprehensive guide to introduce users to the unique features and tools of **Pdplayer**. We will describe each feature and give tips how to properly use them. By the time you are finished reading this manual you will have a complete understanding of the product and be able to implement it in your daily work.

I.2. About Pdplayer

Pdplayer is an advanced **sequence player** capable of playing movie clips and image sequences for the purposes of quality control. Its approach on handling information allows it to play multiple sequences and apply corrections in real time. Even though **Pdplayer** is a reviewing tool its wide range of capabilities allows it to be used for basic compositing and editing.

As a contemporary sequence player **Pdplayer** supports all the industry standard file formats including HDR, EXR, CIN, DPX, SGI, TGA, VRIMG, PIC and more. You can also use **Pdplayer** to view the different channels of EXR and VRIMG files. However its most important feature is its layered sequence playback which means that **Pdplayer** caches each sequence or movie clip on an independent layer. This way of handling information allows for multiple layers to be played simultaneously while applying changes in real time. You can fully control the way layers are composed together and how they are set in the time line. You can also scale each layer independently and change the aspect ratio independently or globally for all layers. **Pdplayer** allows you to move layers in an infinite work space.

Pdplayer allows for basic color corrections to be made in real time . These include **gamma**, **contrast**, **hue** and **saturation** as well as the **exposure** and **soft – clip** for high dynamic range images. All these options are explained in Section IV.5. **Pdplayer** also supports several color blending modes which can be applied in real time. With **Pdplayer's** extended alpha support you can assign any channel from a given layer as an alpha channel for another layer. Further more **Pdplayer** supports the depth channel of EXR, RLA, RPF file formats. The different blending and alpha modes are explained in Section IV.5.c.

Pdplayer offers several specific layer types to speed up your work. (Section VI.1). The **Brush Layer** and **Brush Sequence Layer** allow you to put notes on your compositions. You can use the **Adjustment Layer** to make color corrections to several layers simultaneously. Finally the **Embedded Image Layer** allows you to paste the contents of the clipboard directly in your composition.

With **Pdplayer** you can save your work in several different ways. You can export the whole composition or just a single layer as a sequence of images or as an AVI/Quicktime movie. You can save the composition into **Pdplayer's** specific file format (Section III.3). or export your composition to either Adobe After Effects JSX script, The Foundry Nuke script or Pdplayer Command File (Section III.4).

Pdplayer's extensive command support (Section VIII.1) allows it to be integrated into any production pipeline. You can also assign single commands as well as series of commands or macros to a short key combination thus speeding up the work process. Another important feature of **Pdplayer** is that it can play sequences on external devices allowing you to preview your work on a broadcast monitor (Section IV.2). Finally you can use **Pdplayer's** built-in http server (Section VII) to easily show your partners or clients the result of your work.

II. Installation and Licensing

II.1. Installation

You will receive your copy of the software as a downloaded installation file. To install it double click on the setup file and follow the instructions.

II.2. Licensing system

Currently **Pdplayer** supports two types of licensing – hardware and software.

The software license is locked to the hardware of a specific machine and can later be distributed across the network. Once issued a software license cannot be moved or revoked. Section II.3. examines the software licensing in detail.

Pdplayer licenses can also be placed on a Chaos Group dongle. This allows the licenses to be moved across different machines and shared across different networks.

It is important to note that separate builds exist for the software and hardware licensed versions of **Pdplayer**. This means that depending on the version you purchased you will be given access to download different installation files. If for some reason you do not have the appropriate access please contact the Chaos Group support team at pdplayer@chaosgroup.com.

II.3. Local Software Licensing

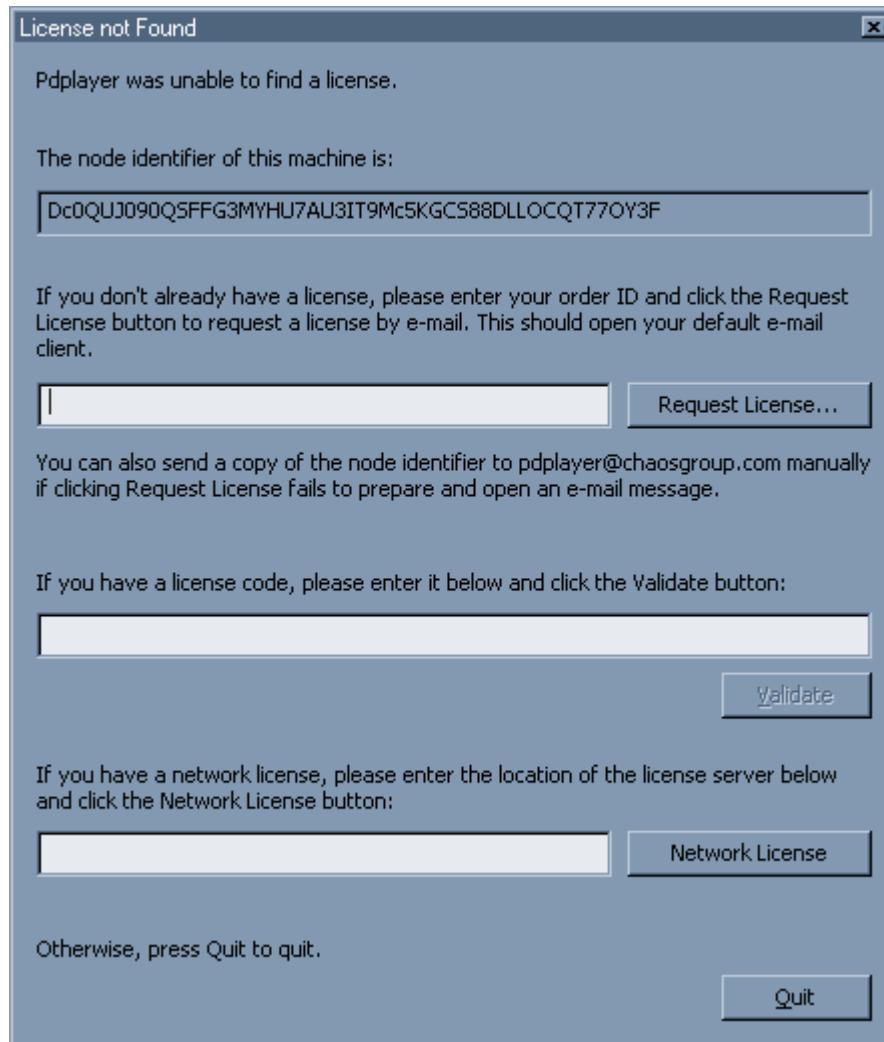


Figure 1. License not Found

When you run the software licensed version of **Pdplayer** for the first time you will be presented with the **License not Found** dialogue (Figure 1) In order to be able to use **Pdplayer** you will need to authorize it with a license key.

Pdplayer's license system allows for two modes of operation - **Local** and **Network**.

In **Local** mode, you run **Pdplayer** on the machine for which you have been issued a license. To authorize a machine you need to enter a license code in the provided field and press the **Validate** button (Figure 1). If you do not have a code you can request one by entering your **Order ID** in the provided field and pressing on the **Request License** button. This should open the default e-mail client. If it does not you can send us an e-mail at pdplayer@chaosgroup.com with your **Order ID** and the **Node Identifier** provided in the first field of the **License not Found** dialogue.

In network mode, you run the **Pdplayer** license server on the licensed machine. This allows you to run **Pdplayer** on other machines on the network.

II.4. Network Software Licensing

II.4.a. General

The **Pdplayer** network licensing system is composed of an independent licensing routine (the **Pdplayer** floating license server, with a license locked to the specific hardware) and the **Pdplayer** itself. The communication between the two is based on the HTTP protocol, even if the license server and the **Pdplayer** are on the same computer. This means that in order for the licensing to work, the computer must have TCP/IP installed properly.

II.4.b. Setting-up the Server

The **Pdplayer** floating license server consists of a single executable file that has to be run prior to launching the **Pdplayer**. The **Pdplayer** installer creates a shortcut to the license server in the Start menu. You can also choose to register the **Pdplayer** floating license server as a Windows service that is started automatically by Windows.

When you start the **Pdplayer** license server for the first time you will be prompted to enter a registration code (Figure 2). To get the license copy the data provided on the first row and send it to pdplayer@chaosgroup.com along with your Order ID. You will receive a reply with a license code. Copy that to the second row and press OK to run the license server.

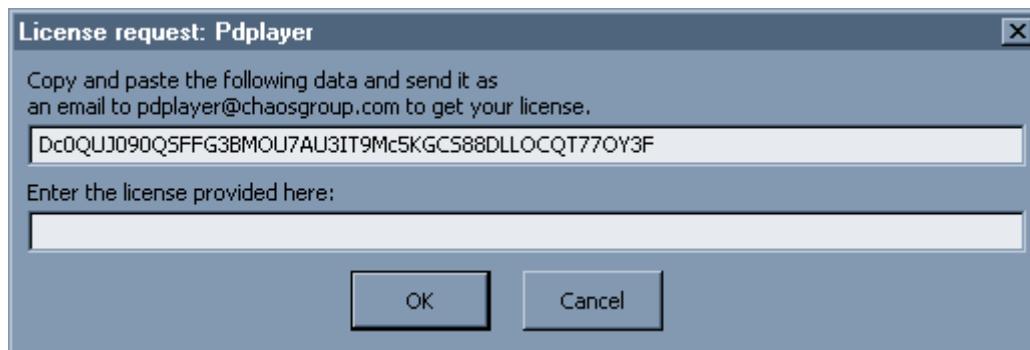


Figure 2. **Pdplayer** floating license

All of the settings of the license server can be found in an .xml file called **VRFLServer2.xml** that would be usually located in **C:\Documents and Settings\All Users\Application Data\ChaosGroup\VRFLServer2.xml**. In case of any problems the user can edit the file directly, but we strongly recommend that, unless the user is experienced, they should not do so.

II.4.c. Securing the Pdplayer License Server

Please keep in mind that it is up to you and/or your system administrator to keep the machine running the **Pdplayer** license server secure from unauthorized access and usage of your **Pdplayer** licenses,

especially if the **Pdplayer** license server is running on a machine that can be accessed from the Internet.

II.4.d. Sharing a License across the Network

To share a license across your network install, license and run the **Pdplayer** license server on a suitable machine. Now install **Pdplayer** on multiple machines across your network. Run **Pdplayer** and when asked for a license (Figure 1) in the bottom field, enter the IP address of the machine which has the **Pdplayer** license server running. Now you will be able to run **Pdplayer** on multiple machines free, provided that the number of copies of **Pdplayer** running does not exceed the number of licenses provided by the license server.

II.5. Hardware licensing

Starting with Pdplayer 1.0.3.12, licenses can be programmed into Chaos Software dongles. If you already have a V-Ray dongle, your Pdplayer license can be added to it. Dongles are also available separately from Chaos Software for \$35 or 25 EUR + S/H.

Note that hardware licensing is supported by a separate Pdplayer build. Contact Chaos Software support at pdplayer@chaosgroup.com if you aren't seeing it in the download area.

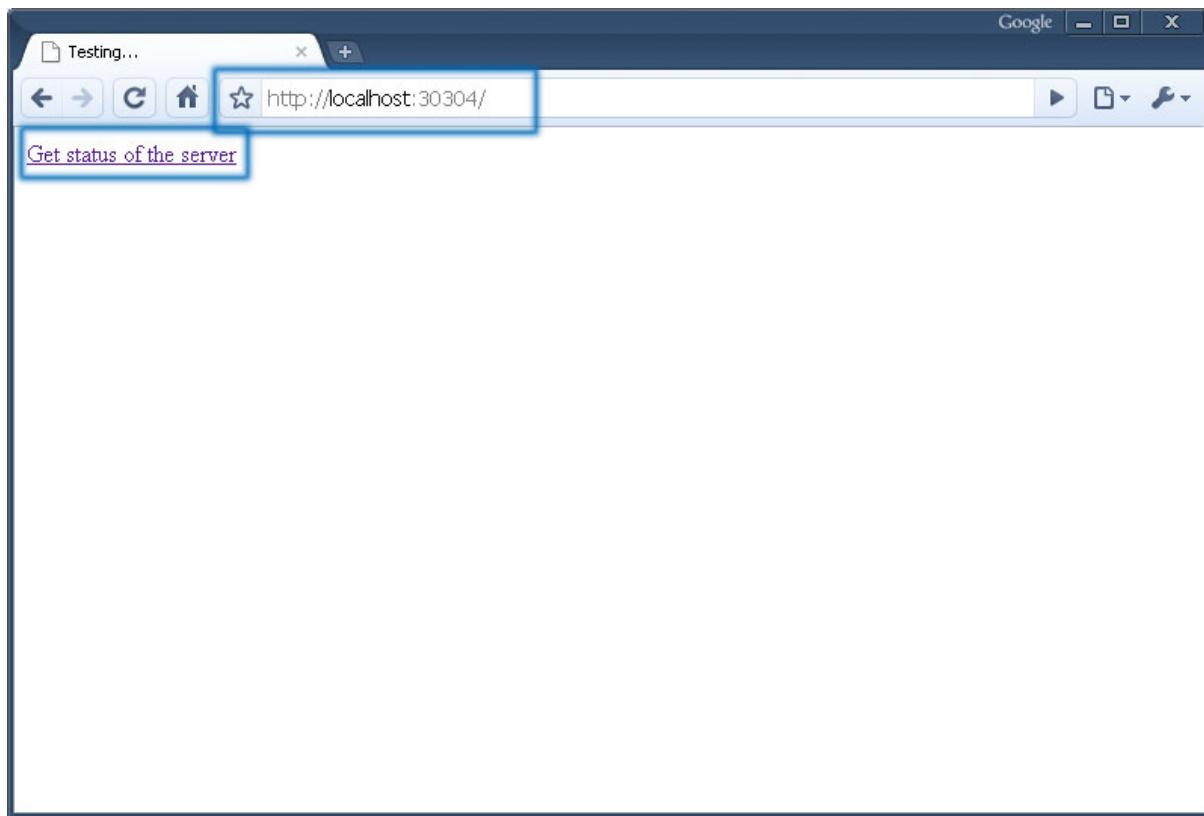
Hardware licensing always operates in floating (network) mode, so you need to be running a license server. You can use the Pdplayer license server included with the hardware build, or you can use a recent V-Ray license server (SP3a or later). The two servers are identical. When you run the hardware licensed version of **Pdplayer** for the first time you will be prompted to specify the location of the License Server (Figure 3). Make sure that you have a License Server sharing licenses over your network and specify its IP address. If you are running the License Server on your local machine you can specify the IP as "localhost".



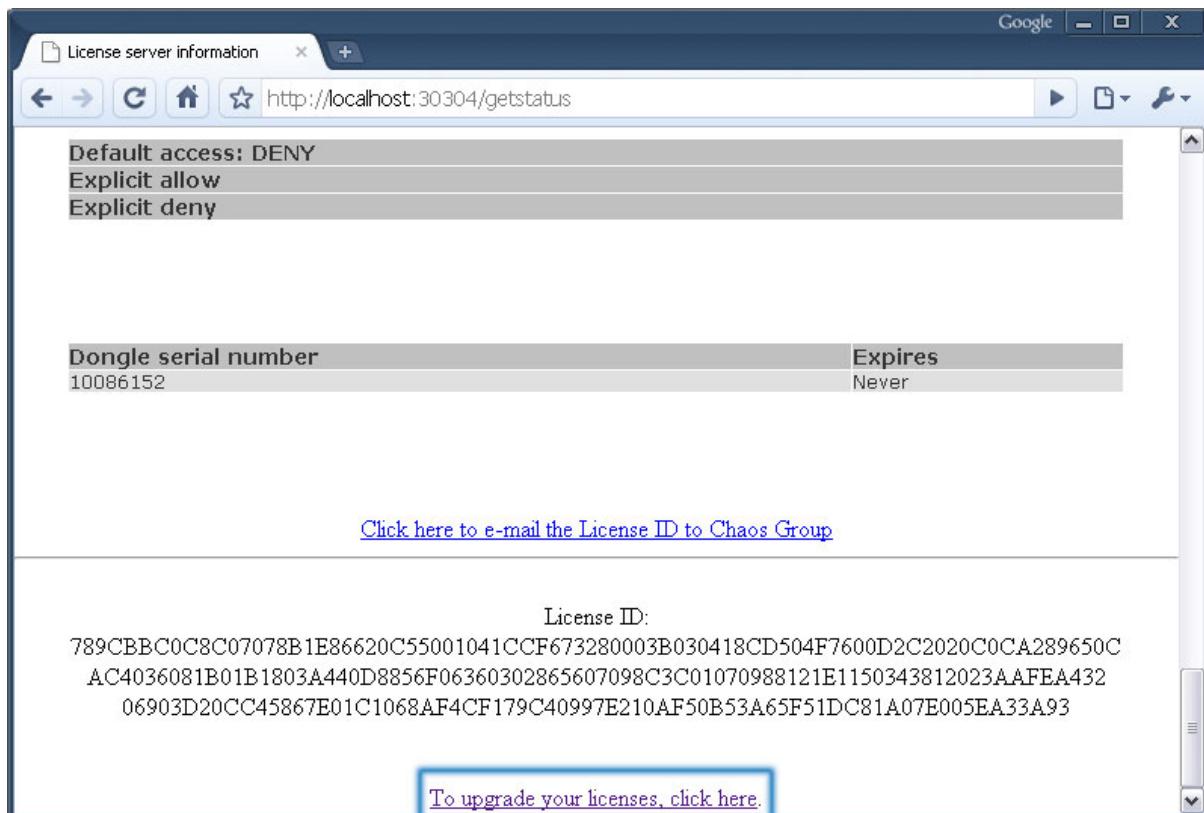
Figure 3. Pdplayer hardware license request

Usually when you receive a dongle it will have no licenses on it. In order to use Pdplayer we need to place a Pdplayer license on that dongle. To do that, please follow the next steps:

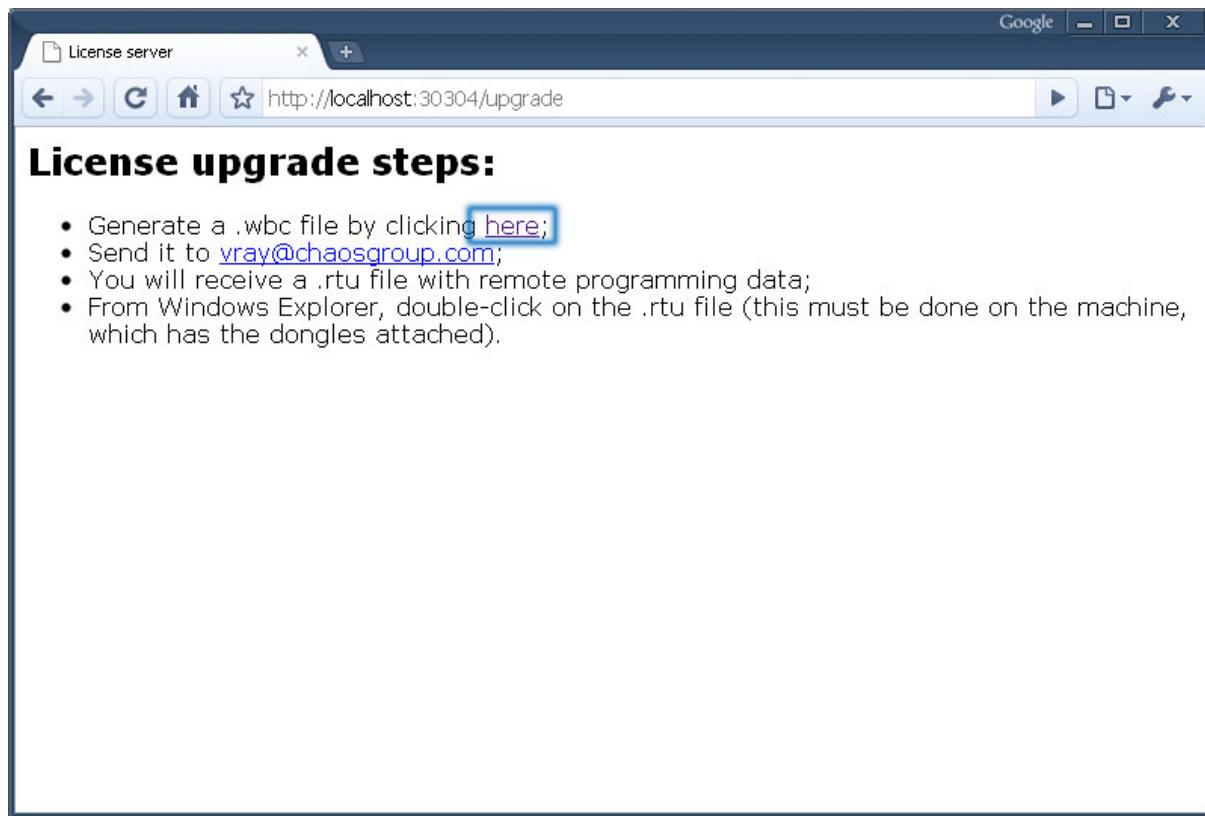
- Start a license server, if one is not already running;
- Open <http://server:30304> in your Web browser, where server is the name or IP address of the machine running the license server (use localhost if it's the same machine);
- Click on "Get status of the server";



- The page that loads will show information about the currently installed licenses on your dongle and how many of them are in use. Click on the "To upgrade your licenses, click here" link at the very bottom;

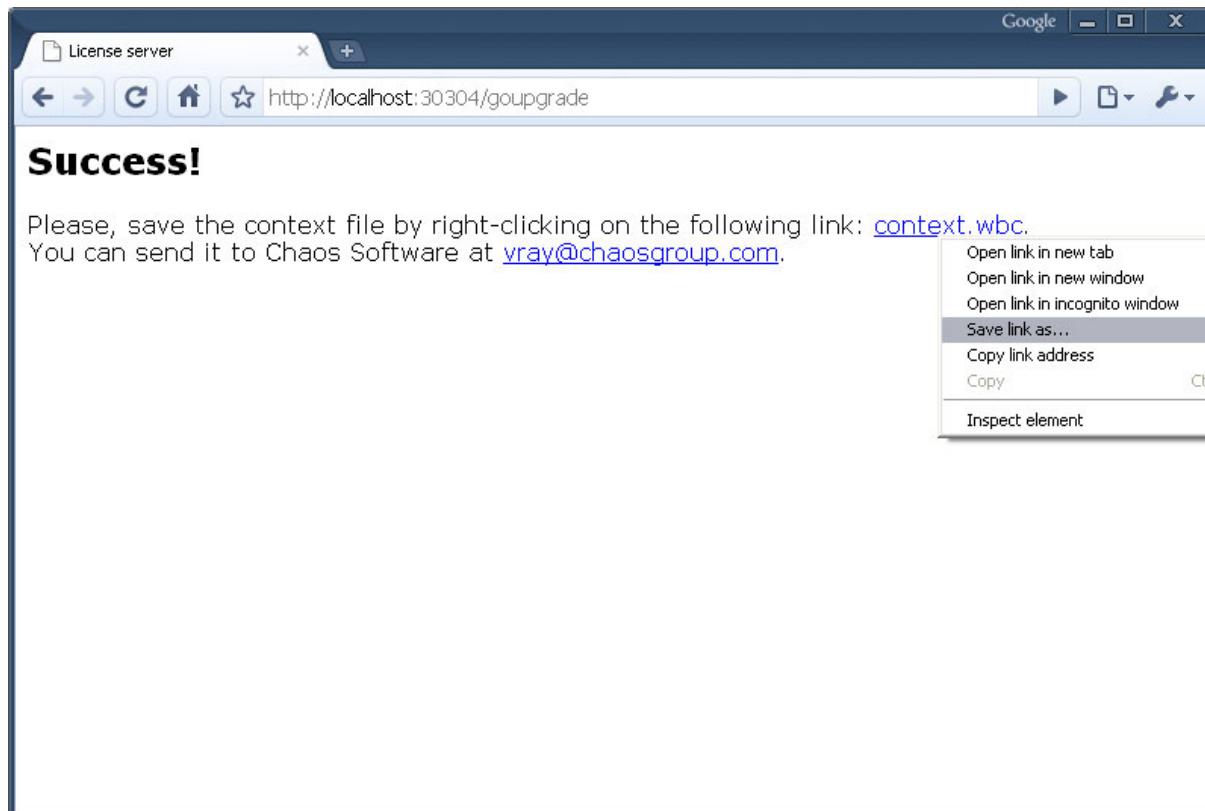


- On the next page, click on the link that says "Generate a .wbc file by clicking here" and wait until a remote context file is created;



- Generate a .wbc file by clicking [here](#);
- Send it to vray@chaosgroup.com;
- You will receive a .rtu file with remote programming data;
- From Windows Explorer, double-click on the .rtu file (this must be done on the machine, which has the dongles attached).

- When the "Success" page opens, save the remote context file (context.wbc) by right-clicking on the link and using Save Link As.. / Save Target As...;



- E-mail the context file to pdplayer@chaosgroup.com.

III. Quick Start

Pdplayer has been designed to provide fast and effective workflows. All it takes to preview a sequence is to drag a single file from it over an open **Pdplayer** window and press play.

III.1. Working with Layers

One of the most powerful features of **Pdplayer** is its layered timeline workflow. Every sequence, movie clip or still image you will ever work with in **Pdplayer** will be placed on a layer. To add a sequence as a layer in **Pdplayer** you can do several things:

- Go to File > Add Layer or press Ctrl + L. This will bring out the Add Layer dialog (Figure 4). Here you can select an image file and click Open to add it as a layer. **Pdplayer** will automatically detect if it is a part of a sequence or a single file and create the appropriate layer type. If you want to add just a single file from a sequence you have to select the **Add as single image** check box. Checking the **Position after current layer** box will place the layer after the current one in the time line. If you are loading one part of a stereoscopic sequence you can select the **Add other stereo view** checkbox to automatically add the sequence for the other view. **Pdplayer** will recognize key words in the path and file name to load the correct sequence. The recognized words are:

"left", "Left", "LEFT", "L", "lf", "LF" identify the left view
 "right", "Right", "RIGHT", "R", "rt", "RT" identify the right view

- Drag and drop a file over an open **Pdplayer** window. Note that if you want to add an image that is a part of sequence as a **Still Image Layer** you should hold the Ctrl key while dragging and dropping it. Holding the shift key while dragging will place the layer current one in the time line.
- Double click on a file if it associated with **Pdplayer**
- Copy/paste a file from windows explorer. Note that if it is an image file it will be added as a still image layer
- Right click in windows explorer Open With > Pdplayer

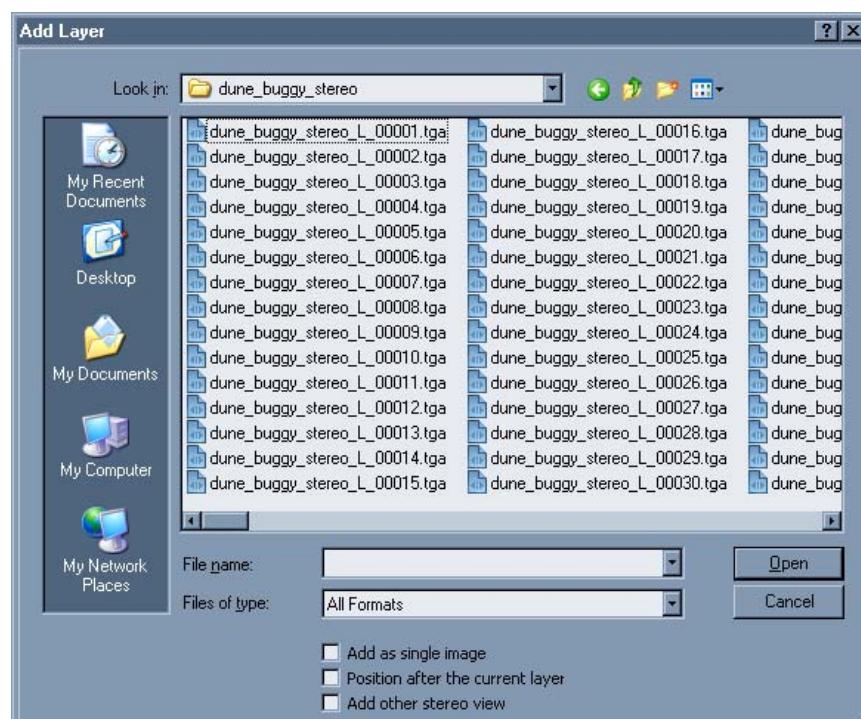


Figure 4. Add Layer dialog

Working with layers is extremely easy. You can select layer by clicking on them – Shift + Click and Ctrl + Click are also supported in order to select multiple layers. The layers can also be selected by **Group ID** (Section IV.5.b). This can either be done by double clicking on the layer number – the number on the left hand side of every layer, or by selecting a layer and going to Edit>Select Group. You can group several layers by selecting them and pressing Ctrl + G or by going to Edit>Assign New Group to Selection.

When you add files that have an alpha channel to your composition **Pdplayer** will by default set the alpha mode for their layers to **Premultiplied Mask**. If you want to change this value you can right click on the blending and alpha mode icon on the right of the layer in the Layer Stack and choose a mode from the menu. You can also have a more advanced control over the blending and alpha modes through the **Property Panel** (Section IV.5.c).

Once you have added layers to your composition you may want to arrange them. You can change how different layers stack over each other by dragging them in the layer stack. You can move the layers in the workspace by holding the Shift key and dragging with the left mouse button. In **Pdplayer** you can decide that you want to play only a part of a layer. By dragging the sides of a layer you can place a **Layer In Point** and a **Layer Out Point**. When the player starts playing the composition it will only show the frames between those two points of the layer. Double clicking on an **In Point** will reset it to 0 and double clicking on an out point will move it to the next complete loop.

While you are arranging the different parts of the composition you may want to see how they fit together. You can preview your work with the Playback Buttons in the Timeline Area (Figure 5). **Pdplayer** allows you to play the composition both forwards and backwards or go through it frame by frame. Upon installation the default frame rate at which **Pdplayer** works is 24 frames per second. You can see the current frame rate in the little box on the left side of the Timeline. There are several ways to change this value. First you can right click on the box and choose from a list of common values. You can also left click on the box and drag or double click on the box and enter a different value.

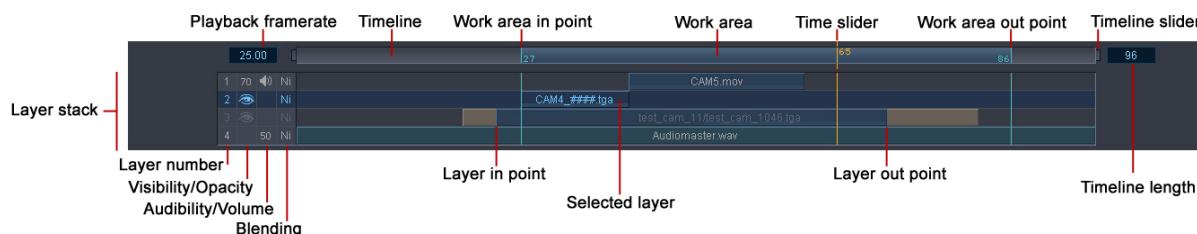


Figure 5. Timeline Area

III.2. The Timeline and Work Area

The timeline and work area determine the composition length in frames. You can change the length of the time line by double clicking on the value to the right of it and entering a number or by dragging the handles on its sides. You can also choose to make the timeline fit the length of the layers in the scene or trim it to the length of the work area. Double clicking on the side handles of the timeline will fit it to the length of the layers. The work area is a part of the timeline that serves as an indicator which parts of the different layers will be played. Anything outside of it will not be played. You can change the length of the work area by left clicking on the sides of it and dragging to scale it. When the work area is shorter than the timeline you can shift it by dragging it with the middle mouse button. Double clicking on either edge of the timeline area will move it to the closest **In** or **Out point** of a layer.

The layer stack holds all the layers in the composition. It allows you to arrange them in the time line. You can stack them vertically so that when you play the composition the top layers will be in front of the bottom ones. To arrange the layers drag them with the left mouse button. **Pdplayer** allows you to play just a part of a layer by placing **In** and **Out points** for it. To do that, go to the start or to the end of a layer until the mouse becomes a two sided arrow and drag. When you drag the end point beyond the end of the layer, **Pdplayer** will add a loop. Double clicking on the **In point** of a layer will move it to the first frame of the sequence. Double clicking on an **Out point** will move it to the closest end of a loop.

III.3. Saving with Pdplayer

Pdplayer allows you to save your work in several different ways. You can save individual layers as well as the result in the mask area (Section IV.4) as either a sequence of one of the five supported image files (.sgi, .tga, .png, .jpg and .tiff) or as one of the two supported video file formats (.AVI Movie or Quicktime Movie). **Pdplayer** also has its own file format in which you can save your whole composition.

- File > Save Compositions As... - this will save the whole composition as a .pdpcmp file.
- File > Save Screen As... - this will save **Pdplayer's** window as an image file
- File > Save Frame As... - this will save the current frame of the current layer as an image file
- File > Save Layer As... - **Pdplayer** will save the current layer as either a sequence or a video file. If the user is saving into either MOV or AVI files and layer has audio it will be saved in the video.
- File > Save Mask As... - **Pdplayer** will save just the result in the mask area as either a sequence or a video file. If the user is saving into either MOV or AVI file and there are layers containing audio in the composition the audio will also be saved.

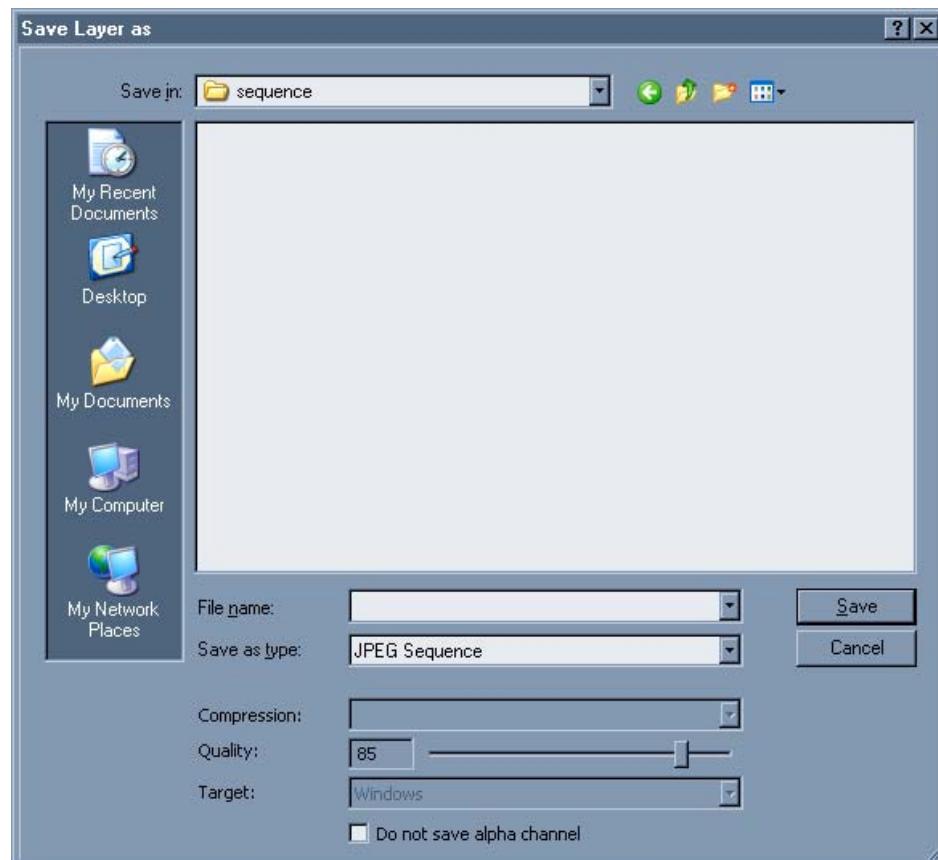


Figure 6. Save as JPEG Sequence

When you choose to save out a JPEG Sequence (Figure 6) you can specify the quality of the compression.

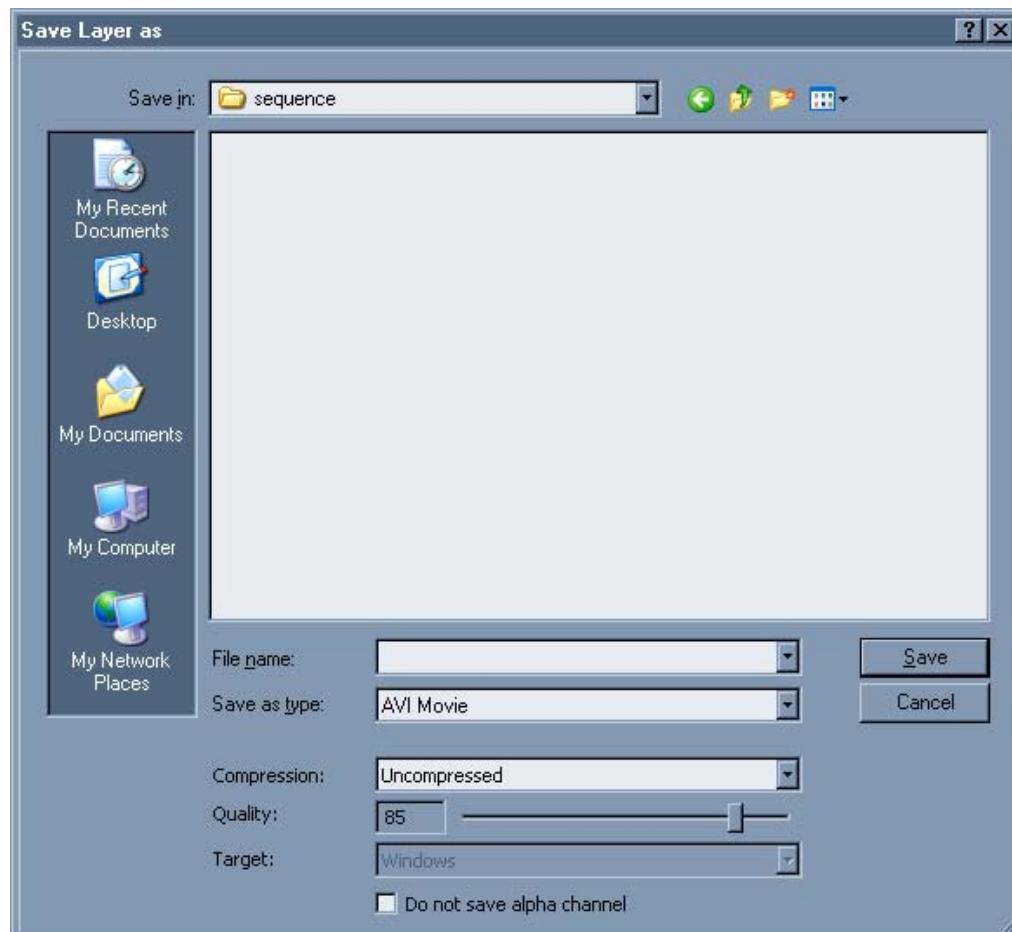


Figure 7. Save as AVI movie

When you choose to save an AVI Movie (Figure 7) you only need to select the compression method and the quality of the clip.

III.4. Export from Pdplayer

With the current version of **Pdplayer** you can export your composition to an After Effects script, a Nuke script and **Pdplayer's** specific **Pdplayer** Command File (**.pdpcmd**). This is done by going to File>Export Composition As which will bring out the "Export Composition as" dialog (Figure 8).

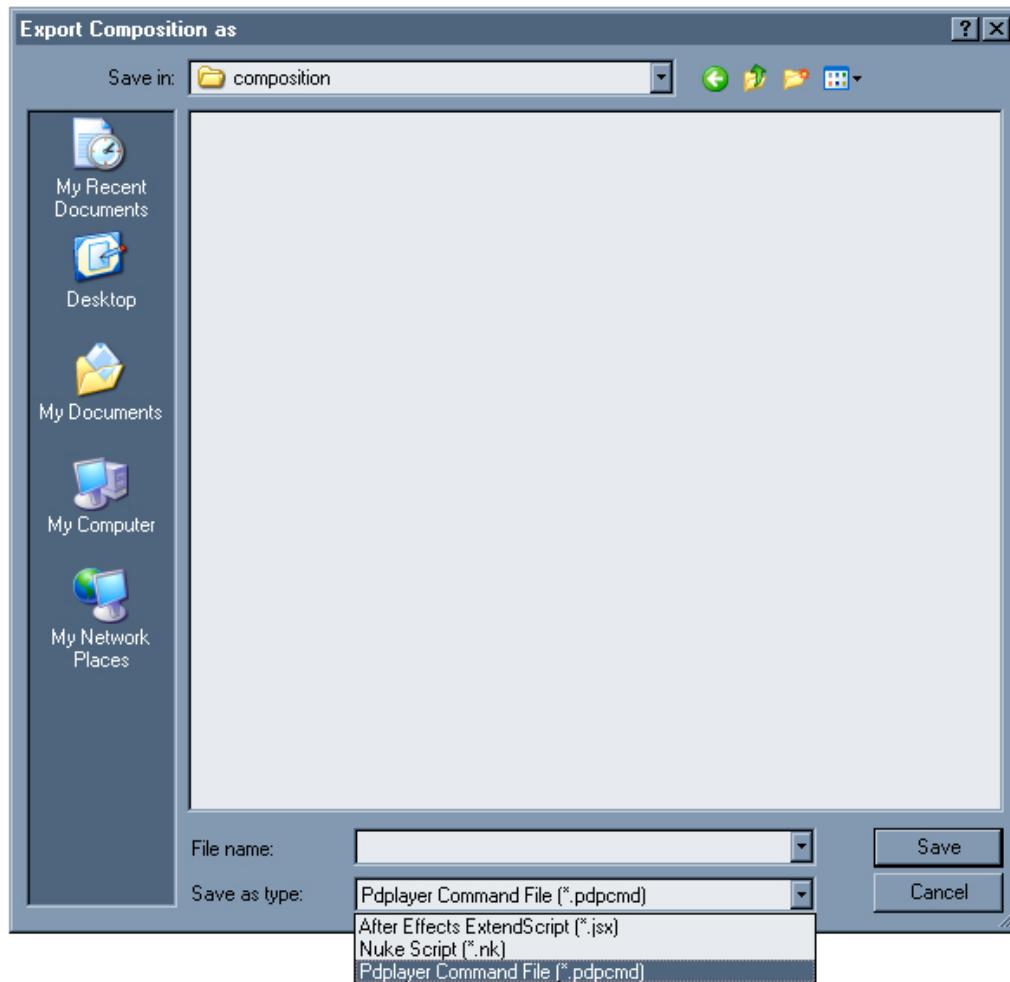


Figure 8. Export Composition as dialog

The following three pictures show a composition in **Pdplayer** which has been exported to both After Effects and Nuke.

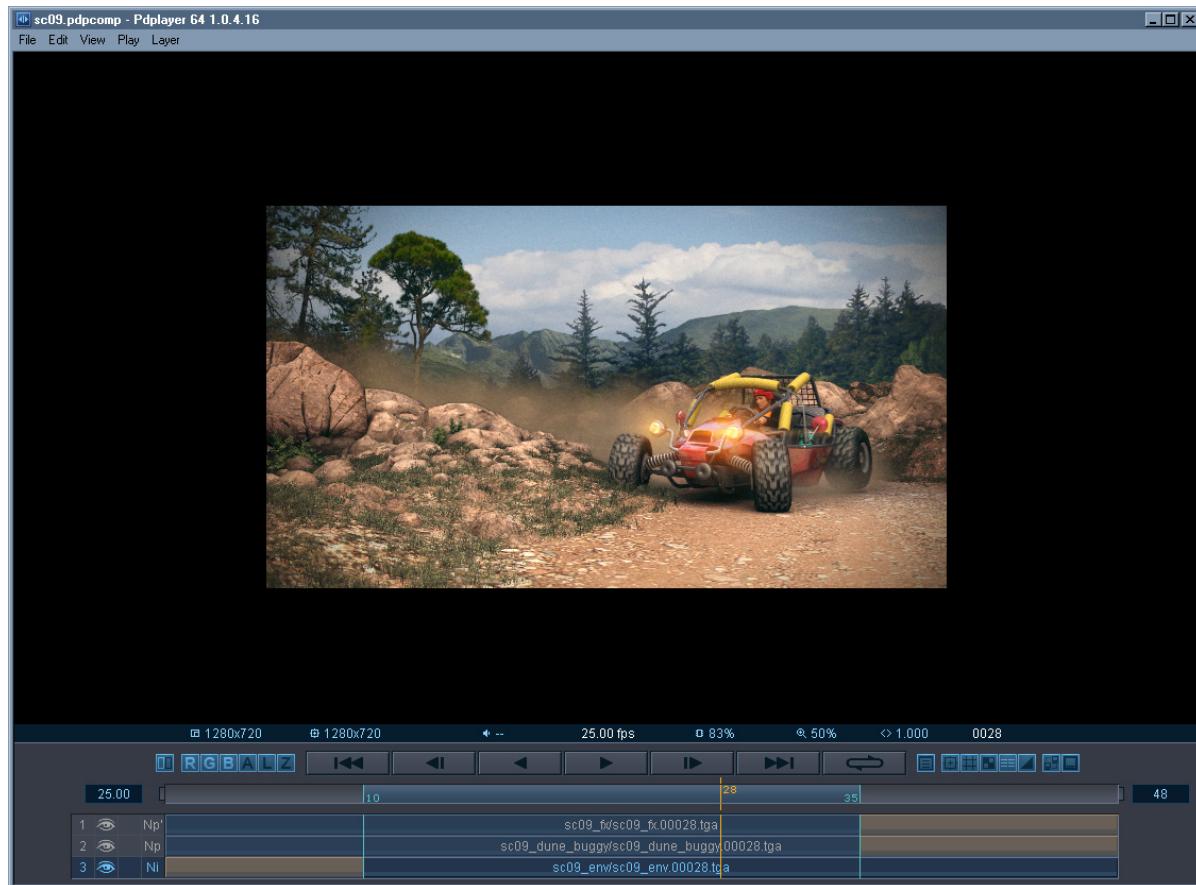


Figure 9. Composition in Pdplayer

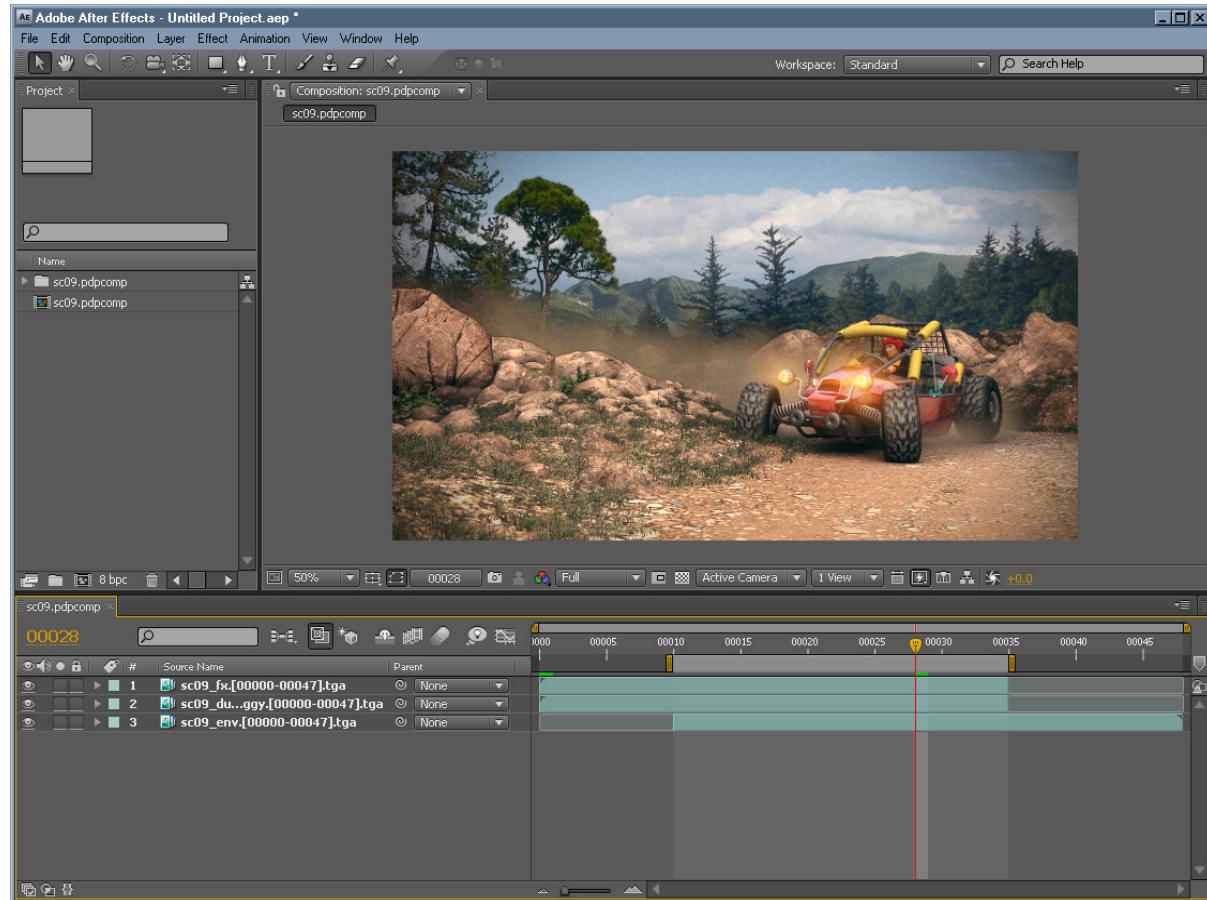


Figure 10. Composition in After Effects

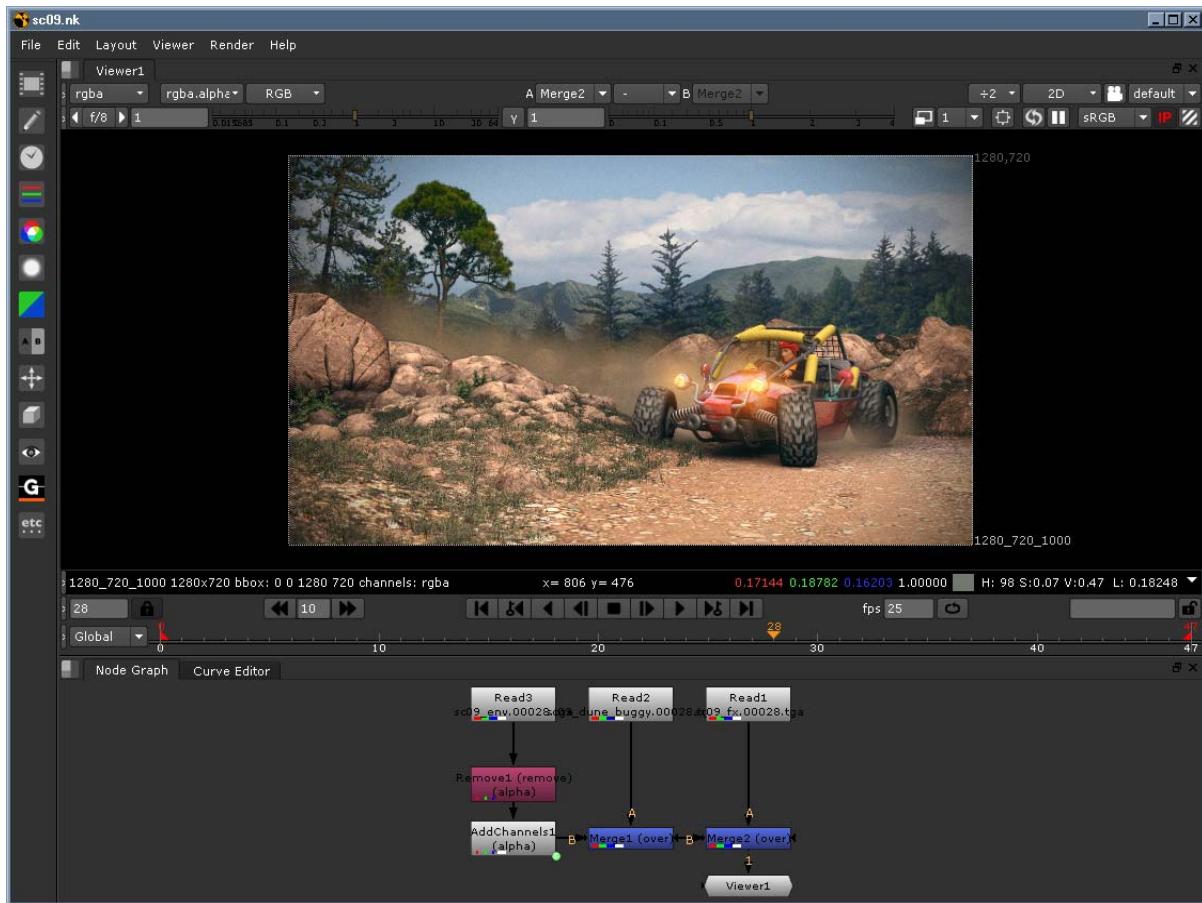


Figure 11. Composition in Nuke

Additional information about integrating **Pdplayer** with external software packages can be found in Section VIII.

The **.pdpcmd** file is actually a text file that contains a set of commands. Executing these commands will set-up a composition the way you have saved it. The format is a very simple text format that is easy to read from and write to. This feature of **Pdplayer** can be used in a couple of different cases.

First it can be used to create macros or a long set of commands to help you in your work. You can very easily set up an initial configuration for your composition for example with a certain image as a background, a resolution for the mask, frame-rate etc. Instead of trying to figure out what commands to use and write them by hand you can just set up the composition and then export it to a **.pdpcmd** file.

The **.pdpcmd** file can also be used to enable integrating **Pdplayer** with third party applications that are currently not supported. Exporting your composition into **.pdpcmd** file it can then very easily be read by a script or a simple application and then imported into a third party compositing application. You can also use any application that has scripting capabilities to create a **.pdpcmd** with the composition set the way you want it. Further more you can very easily generate reference **.pdpcmd** files just by setting up several compositions in **Pdplayer** and exporting them to **.pdpcmd** files. You can then use these files as examples when creating your script in the third party application.

Saving your compositions in **.pdpcmd** files also makes it easier to quickly change the directory paths in cases where the sequences in the composition have been moved. To do that you can edit the **.pdpcmd** file with any text editor and use the Find and Replace feature to replace the old paths with the new ones.

IV. Interface

In this chapter we will go through each feature of the **Pdplayer**'s GUI and explain its purpose, the options available to it and show you how to use it. Later on we will show how to combine the different features to achieve a desired result.

IV.1. Main Graphic User Interface

The interface in **Pdplayer** is divided into several parts where similar features and tools are grouped together. All the operations are just a click away and every command can have a shortcut key assigned to it.

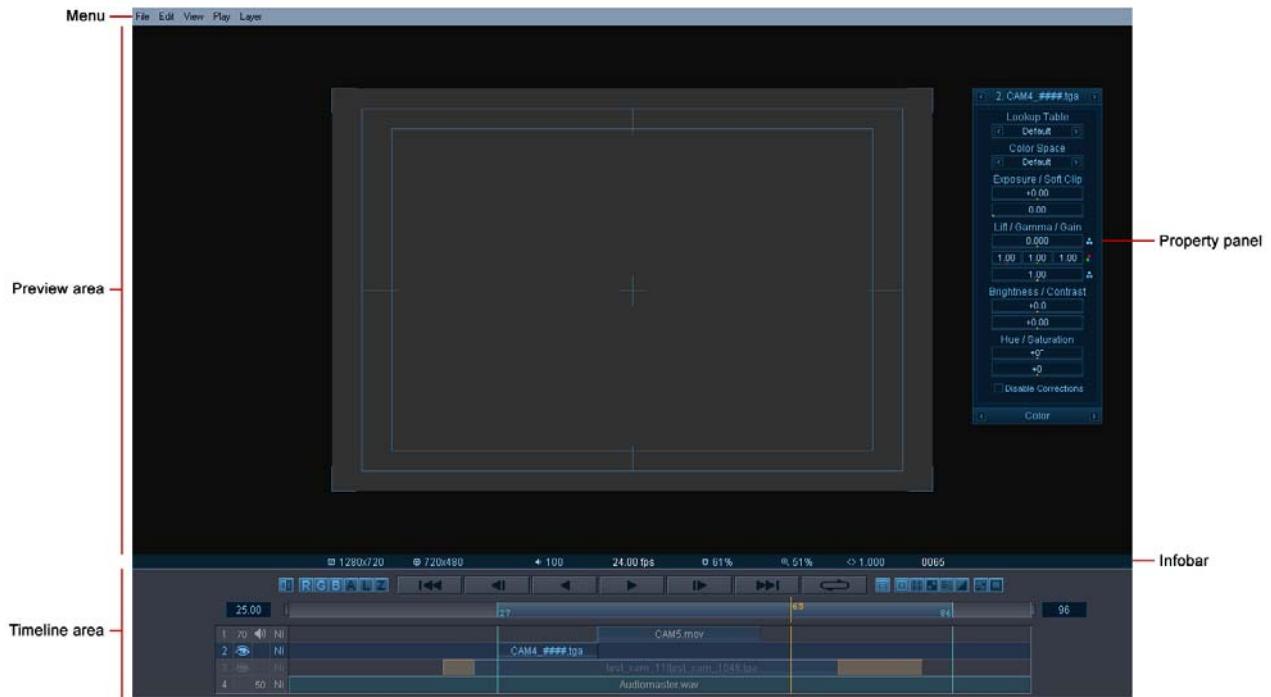


Figure 12. **Pdplayer** GUI

Figure 12 shows the **Pdplayer** Graphic User Interface. There all the different areas of the interface can be seen. The **Menu** holds all the commands and options for **Pdplayer** sorted in five different menus. The **Preview Area** is the workspace where the files loaded for preview will be shown. Here you will also be able manipulate them and see how different options affect them. The **Information bar** shows useful information about the current settings of the **Pdplayer** and lets you quickly change them. The **Timeline Area** holds the **Layer Stack** where all the layers can be seen and manipulated. Here you can also find the Control Buttons the Playback Buttons and the Channel View Buttons. Finally there is the **Property Panel** which holds the parameters for each layer and lets you control them.

IV.2. Timeline Area

The Timeline area (Figure 13) holds the Layer Stack and Timeline area buttons along with the Timeline and Work Area. Here you can set the length of your composition, adjust the frame rate and arrange the different layers in the time line.

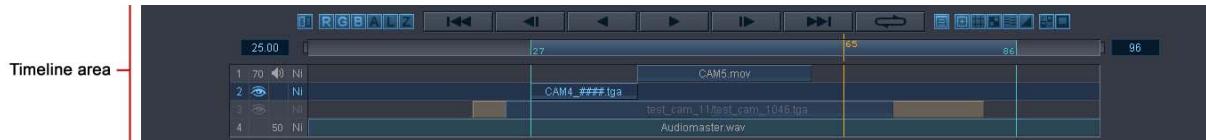


Figure 13. Timeline Area

The upper most part of the Timeline Area is where the Control Buttons, the Playback Buttons and the View Buttons can be found. Each group gives you control over different aspects of **Pdplayer**.



Figure 14. Timeline Area Buttons

The Playback Buttons (Figure 15) as their name suggests control the playback. You can use those to play your composition both forward and backward or if you want to closely inspect it you can go through it frame by frame. You can also change the frame rate at which the composition is being played.

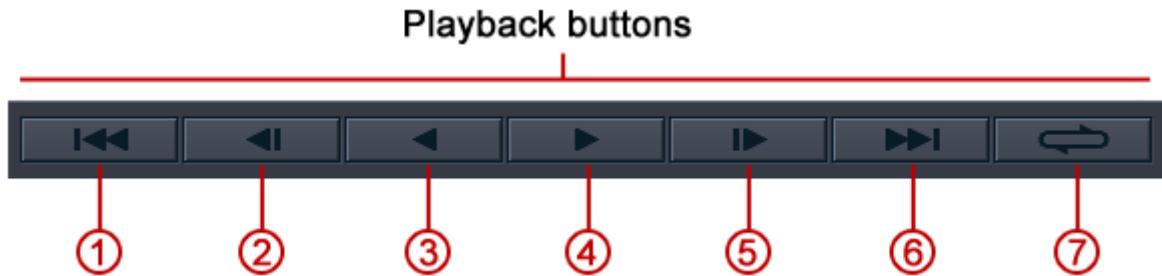


Figure 15. The Playback buttons

- 1 – Moves the **time slider** to the composition's next frame
- 2 – Moves the **time slider** to the compositions' previous frame
- 3 – Plays the **work area** backwards
- 4 – Plays the **work area** forwards
- 5 – Moves the **time slider** to the first frame of the **work area**
- 6 – Moves the **time slider** to the last frame of the **work area**
- 7 – Toggles the repeat mode between once, loop and ping-pong

The channel view buttons (Figure 16) control the channels which **Pdplayer** will show in the **Preview Area**. They are: Red, Green, Blue, Alpha, Luma and Depth. You can view a particular channel by left clicking on it this will make all buttons “dark” except for the one being shown. You can also right click on any of the buttons and choose which channels to be displayed from a menu. The following pictures show the Channel View Buttons along with the effect each option has.

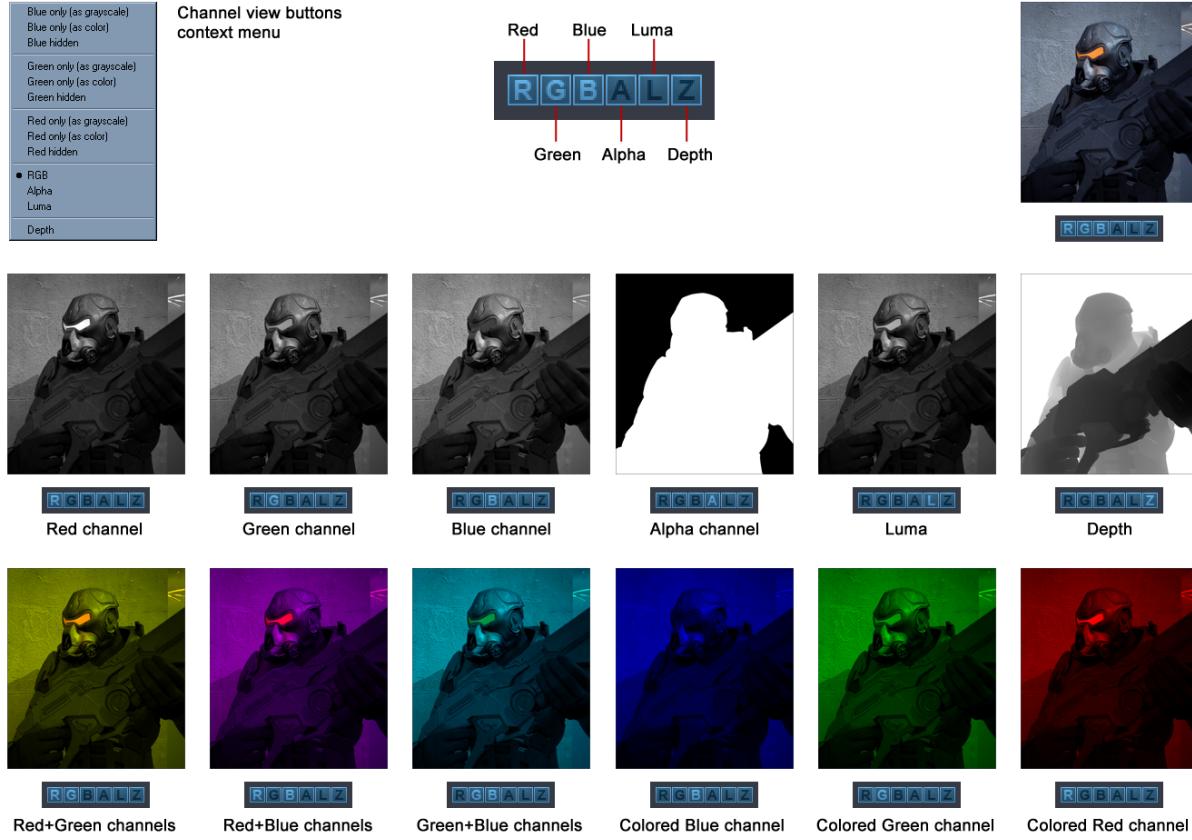


Figure 16. Channel View Buttons and different channel modes

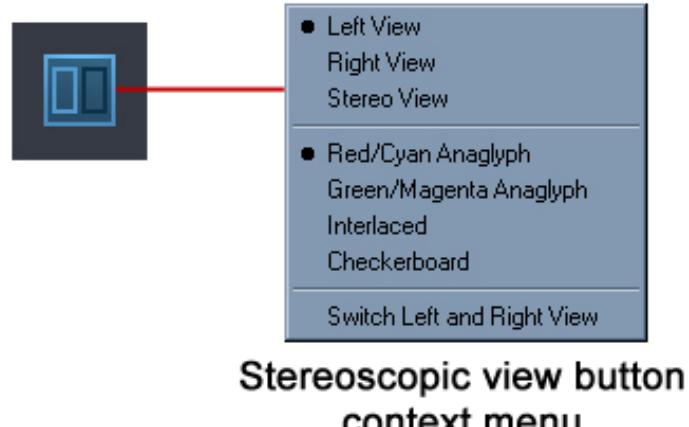


Figure 17. Stereoscopic view button

The Stereoscopic view button (Figure 17) allows you to toggle between the different views in the **Preview Area** when working with a stereoscopic composition. You can also right click to select between the currently supported stereoscopic modes.

The control buttons (Figure 18) allow you to control what is seen in the **Preview Area**.

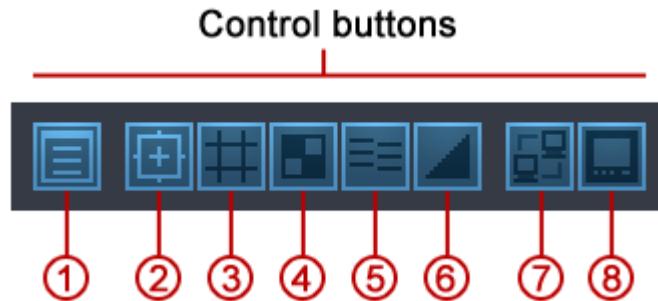
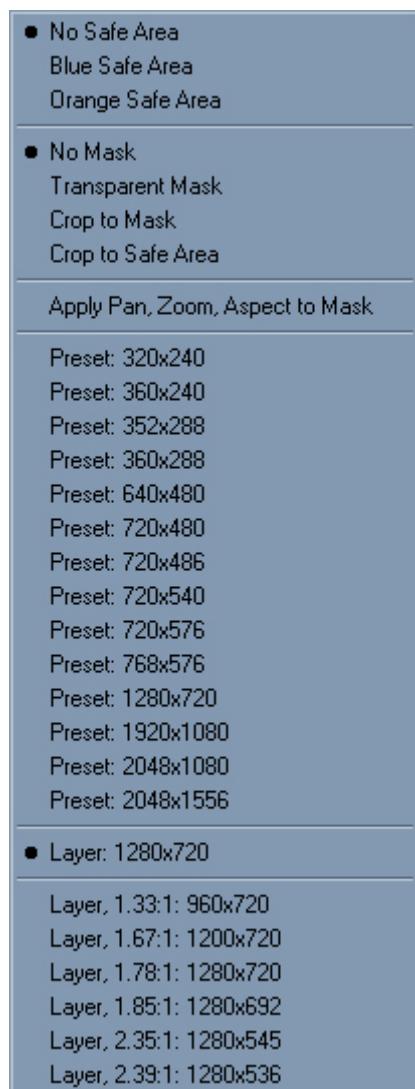


Figure 18. Control Buttons

1 – Shows and hides the **Property Panel** (Section IV.5)

2 – Shows and hides the **safe area** and **mask**. Right click to choose from a set of predefined settings for the **mask** and **safe area**. (Section IV.4)

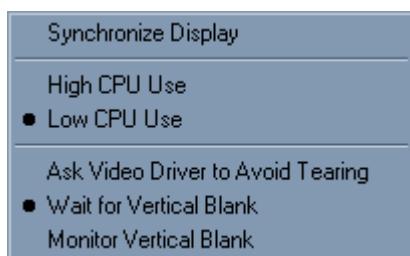


3 – Shows and hides the **workspace grid**

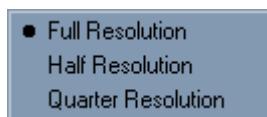
4 – Toggles between black and checkerboard background. Right click to choose from a list of different backgrounds. In addition to the default colors you can choose a custom color or paste a color that you have copied. Finally you can set any color as a **Default** color.



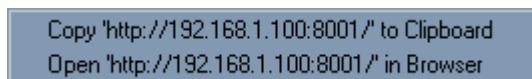
5 – Toggles the **vertical synchronization** on and off for the screen. Prevents tearing but will have a performance hit.. Right click on the button to bring out additional options for the screen synchronization.



6 – Toggles the **cache resolution** between full, half and quarter. This is useful to speed up the working process when you are short of RAM.



7 – Toggles the web server on and off. Section VII gives more detailed information about the http server.



8 – Enables or disables the output device. Right click to choose from a list of available devices.



It is important to note that the resolution of the output signal will be the same as the resolution of the **Mask**. In cases where the output device does not support the Mask resolution it will not work.

One of the great features of **Pdplayer** is its ability to play different sequences or clips simultaneously. This is achieved by adding each sequence or movie as a layer. Figure 19 shows the **Layer Stack**. It has several elements incorporated in it that allow us to work with the different layers and the **timeline**.

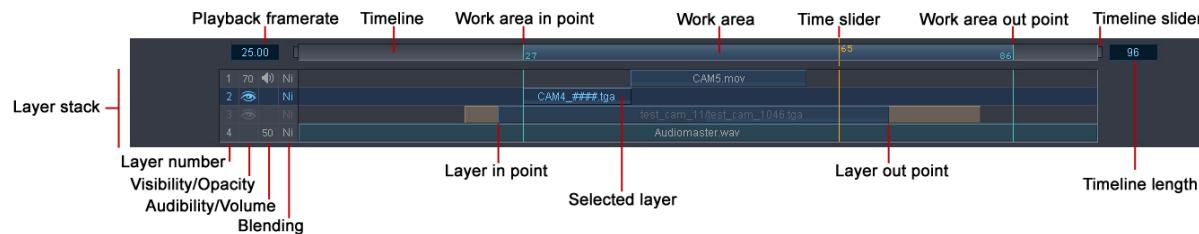


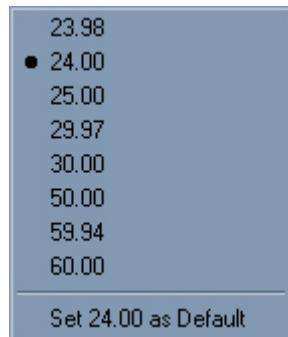
Figure 19. Layer Stack

The upper most part of the **Layer stack** is the **Timeline**. It displays information about the parameters at which the composition is being played and allows us to change them. On the right hand side of the **Timeline** is a number specifying the **Timeline length** in frames. It can be changed by double clicking and entering a different number. It can also be set to fit the length of all layers or the length of the **Work Area** by right clicking and choosing a command from the context menu.

Resize Timeline to Fit All Layers
Trim Timeline to Work Area

The **work area** is actually the part of the time line that is being played. It is represented by a blue bar inside the **Timeline**. You can change the length of the **Work Area** by going to the left or right side of it with the mouse and click and drag to scale it. You can also move it within the **Timeline** by dragging it with the middle mouse button.

On the left hand side of **Timeline** is the **Playback Frame** rate parameter that specifies the rate at which the movie or sequence is being played in frames per second. You can change this either by clicking and dragging with the left mouse button or by double clicking it and typing a number. You can also right click on the number to select from list of predefined frame rates.



Below the **Timeline** are all the layers. Each layer is represented by a bar with a name. On the left hand side of the layers there are four indicators. The first one is the number of the layer. The next icon is the **transparency** of the layer. You can show or hide the layer by clicking on this icon or change the transparency using the mouse wheel over it. The third icon is available when the layer contains audio. It allows you to control the volume of the audio for the specific layer. The last icon controls the layer blending. Right click on it to change the blending and alpha mode of this layer (Figure 20).

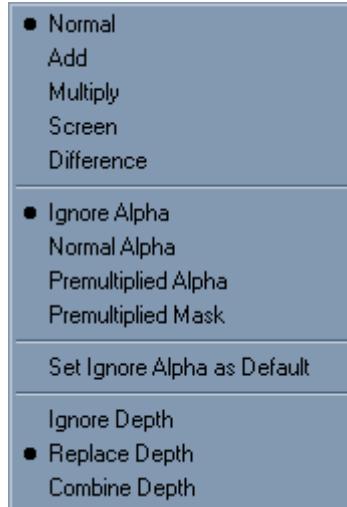


Figure 20. Blending modes context menu

The first part of the menu allows you to choose between the five basic blending modes for the layer. You can also choose the alpha mode for the layer and the way **Pdplayer** uses the information in the depth channel. The different Alpha and Blending modes are explained in Section IV.5.c.

IV.3. Information Bar

The **Information bar** (Figure 21) shows some useful information about the current settings at which **Pdplayer** is working. It also allows you to quickly change these settings.

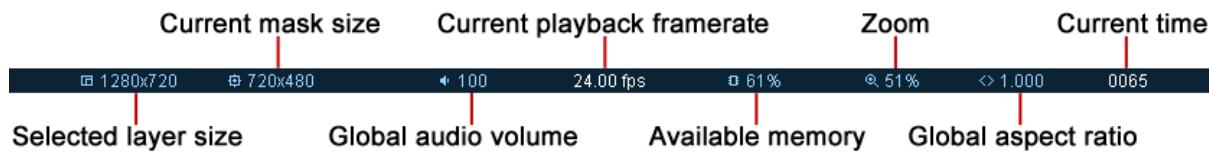


Figure 21. The Information bar

Selected layer size – Shows the resolution of the current layer

Current mask size – Shows the resolution of the current **mask**. You can left click to show/hide the **mask** it in the **Preview Area** or right click to choose from a set of predefined resolutions. Double clicking on the value allows you to set a custom resolution for the **Mask**.

Global Audio Volume – left click and drag to the sides or use mouse wheel to globally control the audio volume. Double click to mute the sound.

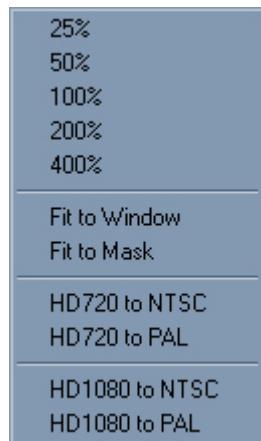
Current playback framerate – Shows the current **frame rate** at which **Pdplayer** is playing. Click to allow or disallow skipping of frames in order to maintain the frame rate.

- Allow skipping frames
- Do not allow skipping frames

Available memory – Displays the amount of free RAM in percent. You can right click to set a minimum amount of free RAM to be left by **Pdplayer**.

- 10%
- 20%
- 30%
- 40%
- 50%

Zoom – Shows the current zoom factor. You can left click and drag to zoom in and out or right click to choose from a list of predefined zoom factors. Double click to toggle between 100 percent and fit to window.



Global aspect ratio – Shows the current global aspect ratio correction. Right click to choose from a list of predefined ratios. Left click to toggle between 1 and the selected ratio.

- 0.889
- 0.900
- 0.938
- 1.000
- 1.067
- 1.111
- 1.125
- 1.200
- 1.333
- 1.422
- 1.500
- 2.000

Current time – Shows the current time in frames or seconds. **Pdplayer** can also display embedded information about the frame number, time code, edge code and key code from .DPX, .RLA, .EXR and .CIN files. Finally the current frame number can also be read from the file name. You can right click and select from a list which information is going to be displayed in that field.

- Composition Frame
- Composition Time Code
- Frame from File Name
- Embedded Frame Number
- Embedded Time Code
- Embedded Edge/Key Code

IV.4. Preview Area

The preview area is where most of the work with **Pdplayer** takes place. Figure 22 shows the different parts of the Preview Area.

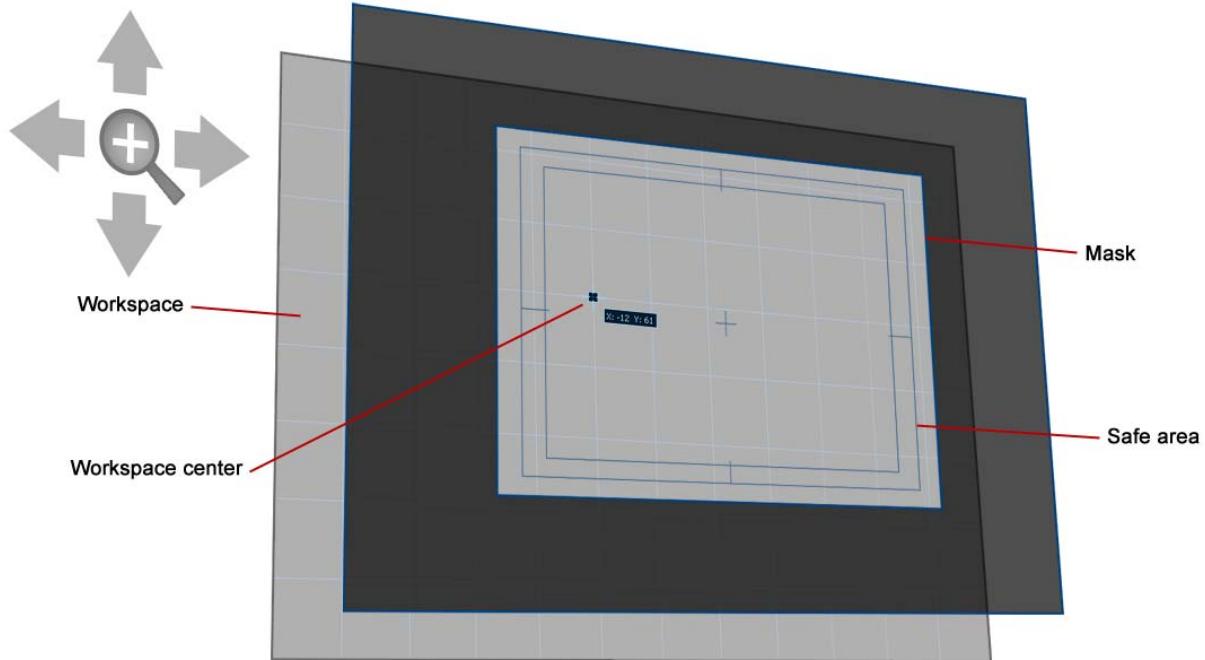


Figure 22. The Preview Area

The **work space** is where the layers are shown. Here they can be moved in respect to each other and the center of the **work space**. You can also scale them and see the results from other modifications you apply on them.

The **Mask** makes it easy for us to see what parts of the layers will be visible in the final output. The **Safe Area** is a part of the **mask** that takes into consideration the fact that monitors and TV sets clip out the corners of the incoming video signal. The **Safe Area** actually shows the user which parts of the final output will be clipped out and which will be shown when it is displayed by a regular TV Set. You can pan and scan the work space in respect to the mask and safe area by dragging with the middle mouse button. To reset the zoom and position of the workspace press the Num Pad 5 button once. Pressing it again will toggle the zoom factor between 100% and the one that will fit the current workspace to the window size.



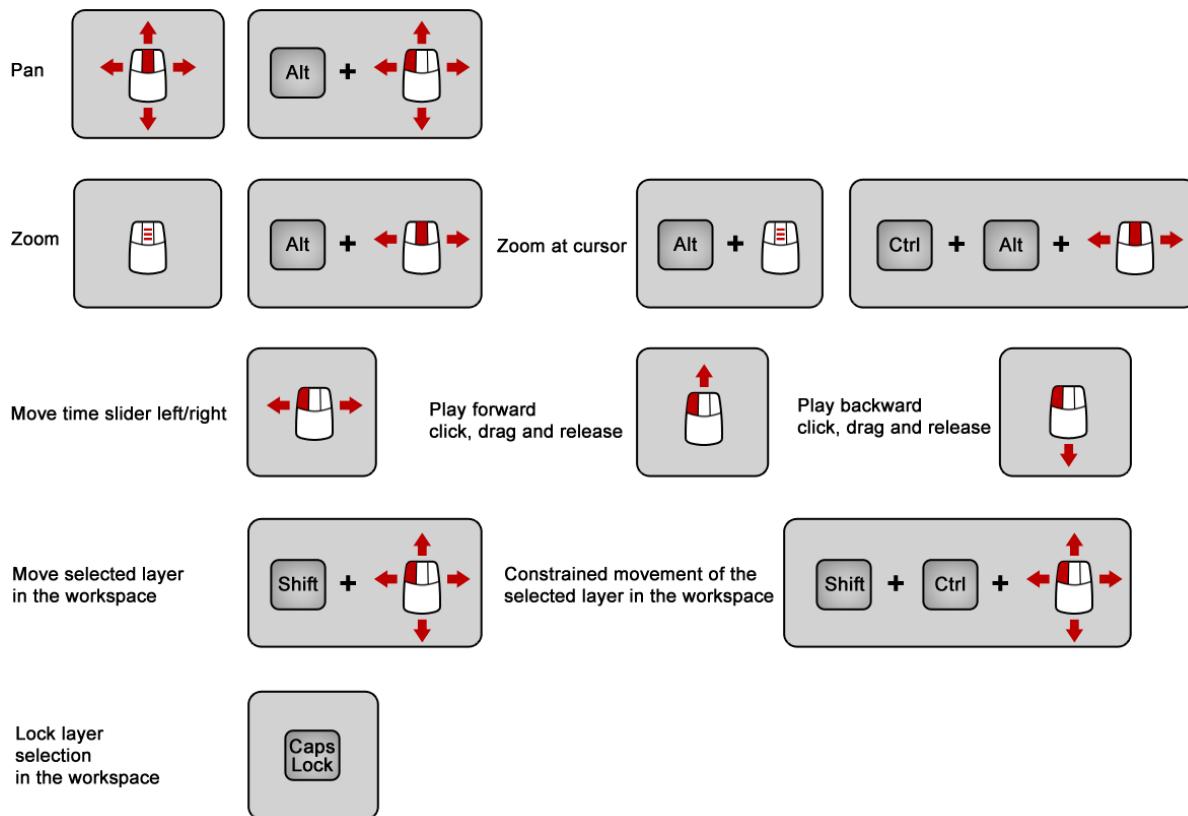
Figure 23. Layers in work space

Figure 23 shows two layers in the **work space**. The top one is selected and we can see the Scale handles in the corners. You can click on each handle and drag to scale the layer. **Pdplayer** also allows you to crop the layer by pressing Shift + K. This will bring out the crop area which is represented by a dotted line rectangle (Figure 24). You can scale and move the crop area just like you would do with a layer while holding down the Shift Key. When you have finished positioning and release the Shift Key you will be able to see only the part of the layer that lies within the crop area.



Figure 24. Crop Layer

To work with the layers in the Preview Area use the following commands:



You can bring the preview area context menu (Figure 25) by right clicking anywhere in it. It has some commands that are already available as buttons as well as some new commands along with shortcut keys to them.

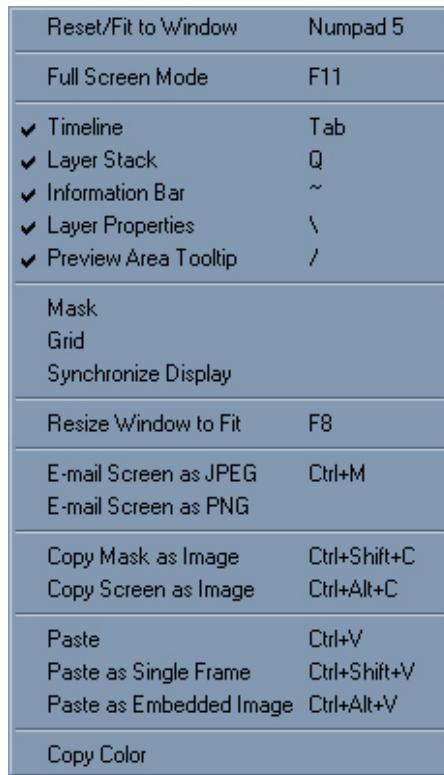


Figure 25. Preview area context menu

- **Reset/Fit to window** – toggles the zoom factor between 100 percent and one that would fit to the window size.
- **Full Screen Mode** – toggles between normal and full screen mode where you have larger preview area and the Menu Area is hidden.
- **Timeline** – shows and hides the Timeline Area.
- **Layer Stack** – shows and hides the Layer Stack.
- **Information Bar** – shows and hides the Information bar.
- **Layer Properties** – shows and hides the Layer Property Panel.
- **Preview Area Tooltip** - when this option is selected holding the mouse pointer over a pixel will bring out a tooltip containing information about that pixel.
- **Mask** – shows and hides the Mask and Safe Area.
- **Grid** – shows and hides the grid.
- **Synchronize Display** – toggles vertical synchronization **on** and **off**.
- **Resize Window to Fit** – this command resizes the window to fit the current zoom factor. This will only work if the window is not maximized.
- **E-mail Screen as JPEG** – E-mails a screenshot of the window in .jpg format using the system's default e-mail client.
- **E-mail Screen as PNG** – E-mails a screenshot of the window in .png format using the system's default e-mail client.

- **Copy Mask as Image** – takes whatever is visible in the **Safe Area** and **Mask** and puts it in the clipboard.
- **Copy Screen as Image** – takes the current screen and puts it in the clipboard.
- **Paste** - Pastes the clipboard content as new layer. If the clipboard contains previously copied frame or layer from **Pdplayer** it will be pasted as a new still image layer or sequence layer respectively. You can copy one or more images from Windows Explorer to the clipboard and paste them as clipboard layers. In cases where single or multiple directories are copied, **Pdplayer** will paste them as sequence layers.
- **Paste as Single Frame** – pastes the content of the clipboard as a **Single Frame Layer**.
- **Paste as Embedded Image** – Pastes the content of the clipboard as a new **Embedded Image Layer**.
- **Copy Color** – copies the RGB values of the color under the cursor.

IV.5. Property Panel

The **properties panel** (Figure 26) is the main tool we can use to make any changes to the layers. Here we can edit the color settings for a given layer, control its placement and size or set its blending options. We can also change the settings for the brush and text layers. The properties panel also holds the Effects Tab which controls the Color Key effects. The last tab of the Property Panel is the Source tab. It holds the controls for the stereoscopic effect and allows you to choose between different versions of a given sequence or between different layers of an Open EXR or .vrlmg sequence. Most of the settings in the properties panel are controlled with sliders. You can set values for those settings either by double clicking and entering a number or by dragging the slider. Alternatively you can hold down the Alt key to change the dragging speed for the slider.

IV.5.a. Color Panel

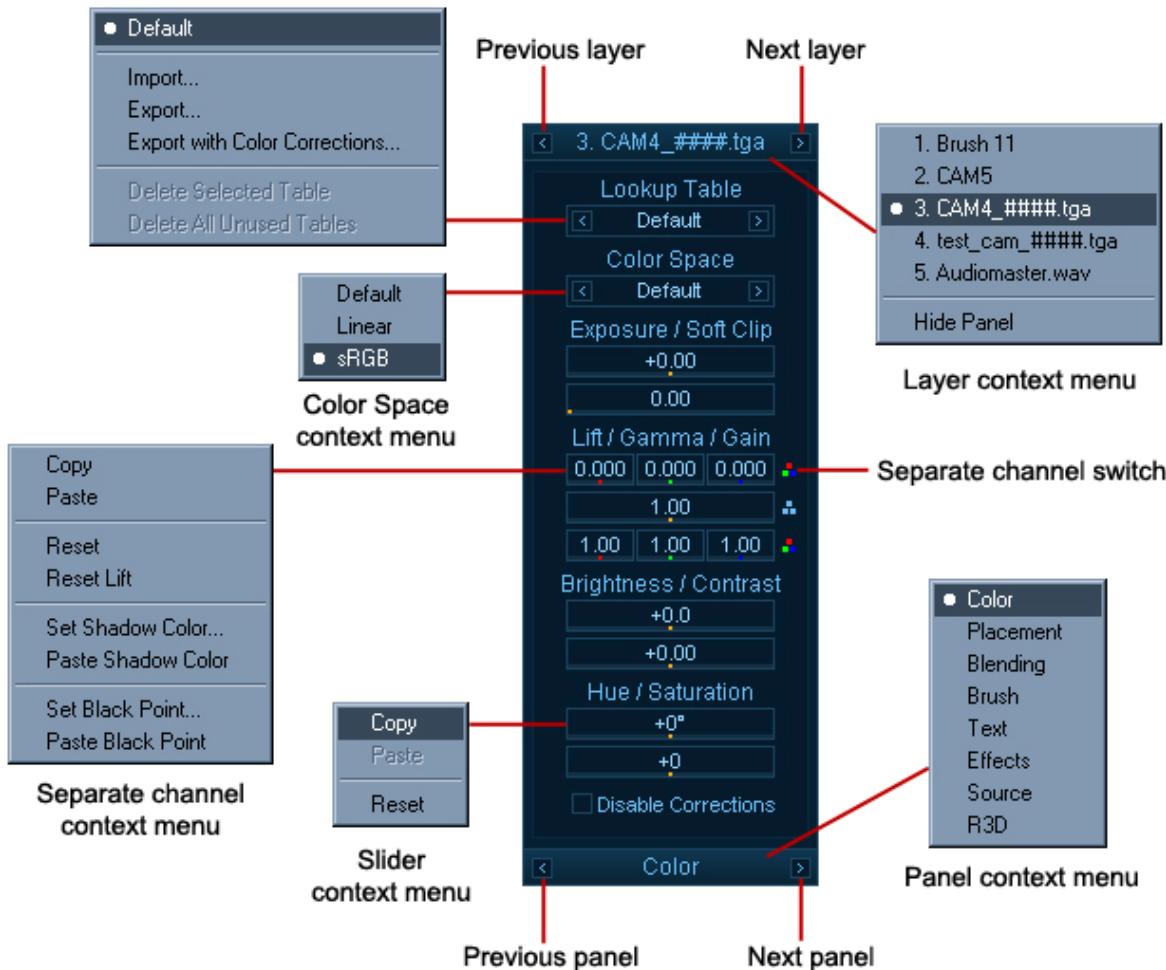


Figure 26. Property panel

Figure 26 shows the **Property Panel** and in particular the **Color panel**. You can cycle through the different panels by clicking on the **Previous Panel** or the **Next panel** button or by right clicking and choosing from the context menu. To choose which layer you will edit you can select it in the Layer Stack, use the **Previous layer** and **Next layer** buttons on the Property Panel or right click and pick it from the Layer context menu.

Lookup Table – Pdplayer supports 1D and 3D lookup tables (LUTs). To use a lookup table right click on the Lookup Table chooser and pick one from the list. You can also import your own lookup tables. The supported formats are Autodesk .3dl, Nucoda .cms and Iridas .cube. 3dl tables are assumed to have 12 bits of output (range 0...4095). .3dl and .cube are assumed to contain sRGB values by default whereas .cms is assumed to be linear. **Pdplayer** comes with a set of commonly used Lookup tables that can be found in "installation folder"\LUTs (Figure 27).

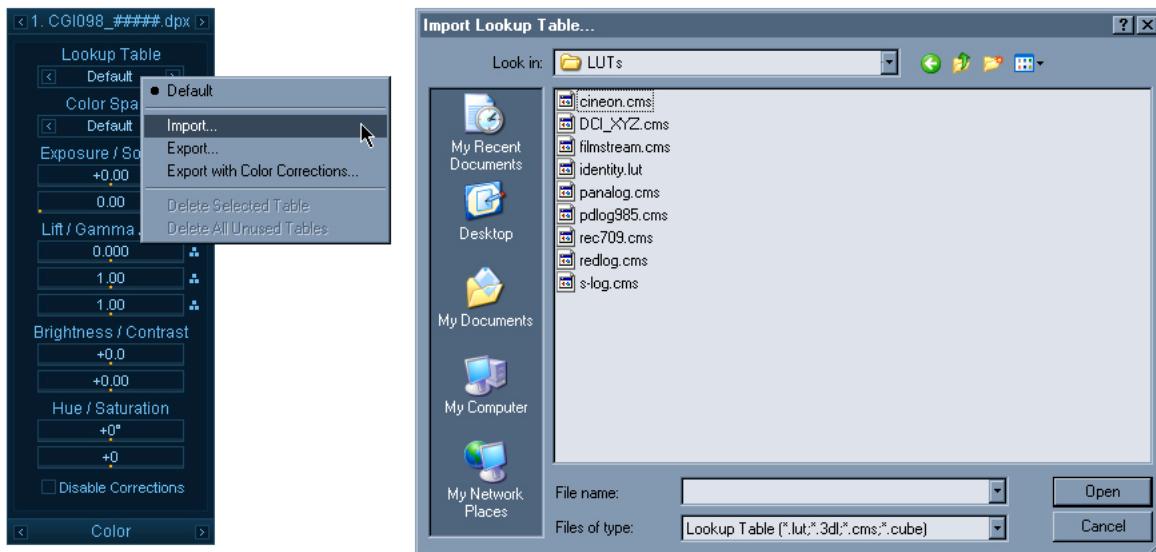


Figure 27. Import LUT

Color Space - allows you to control the color space for the particular layer. You can choose from three different options **Default**, **Linear** and **sRGB**. You can cycle through them with the arrows on both sides of the value or right click and choose a **color space** from the context menu.

Exposure/Soft Clip - these sliders control the Exposure and Soft Clip levels for the current layer. You can change the values either by clicking on the slider and dragging or by double clicking on it and entering a value in the box. The first slider controls the **Exposure** and it can take values between minus infinity and plus infinity. An exposure of + 1 means that the image will be two times brighter and exposure of -1 means that the image will be two times darker. The second slider controls the **Soft Clip** levels and it can take values equal to or larger than zero.

Lift /Gamma / Gain – these sliders allow you to control the **Lift**, **Gamma** and **Gain** values for the current layer. You can change these values for the Red, Green and Blue channel simultaneously or click on the **Separate channel switch** to edit them independently.

The next two sliders control the **Brightness** and **Contrast** levels. Both can take values between minus infinity and plus infinity and you can change them by clicking on the slider and dragging or by double clicking on it and entering a value in the box.

The last two sliders control the **Hue** and **Saturation** respectively. **Hue** can take values between -180 and 180 degrees and **Saturation** can take values between -100 and plus infinity. Both values can be changed by clicking on the slider and dragging or by double clicking on it and entering a value in the box.

Finally there is the **Disable Corrections** checkbox. You can use this option to quickly toggle between the original image and the one with the color corrections applied to it. You can toggle this option with the short key Shift + C.

You can right click on any slider to bring the **Slider context** menu. From it you can copy/paste and reset its value.

IV.5.b. Placement Panel

The next part of the **Property Panel** is the **Placement Panel** (Figure 28). The first two fields allow you to specify a **Name** and **Group ID** for the current layer. The **Name** is displayed on the layer and the **Group ID** can be used to create selection sets. The user can also use those unique names when writing embedded text fields (Section XII). From this panel you can also control the **Position**, **Scale** and pixel **Aspect** of the current layer. You can flip the layer horizontally and vertically. The X and Y coordinates of the layer are controlled by the first two sliders. Like any slider you can left click and drag to change the value or you can double click and write a value in the box.

The **Scale** of the layer is controlled by the next two sliders. By default the values are locked together so that they have the same value. You can unlock them by clicking on the **link slider switch**. You can flip the layer horizontally and vertically with the two check **boxes** **Flip horizontally** and **Flip Vertically**. Finally you can control the pixel aspect for the current layer from the **Aspect** slider. In addition to the common ways of setting a value for a slider you can right click on the **Aspect** slider and choose from list of predefined values.

You can enable or disable the **Crop Area** from the **Crop** check box. When the crop area is enabled you will be able to control its X and Y position as well as its Width and Height with the help of the four fields below the check box. You can also drag the edges of the **Crop Area** in the preview area to resize it or double click on them to reset their position. Finally you can hold Shift and drag the **Crop Area** to position it.

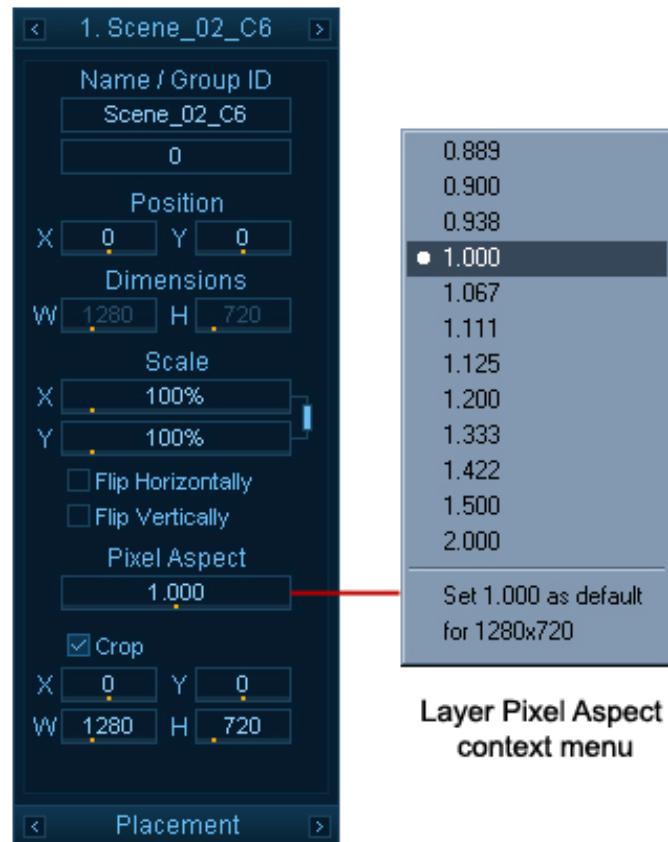


Figure 28. Placement panel

IV.5.c. Blending Panel

Figure 29 shows the **Blending Panel**. It gives you options to control the color blending, alpha and depth for the current layer. You can also assign channels from other layers to be used as an alpha channel in the current layer.

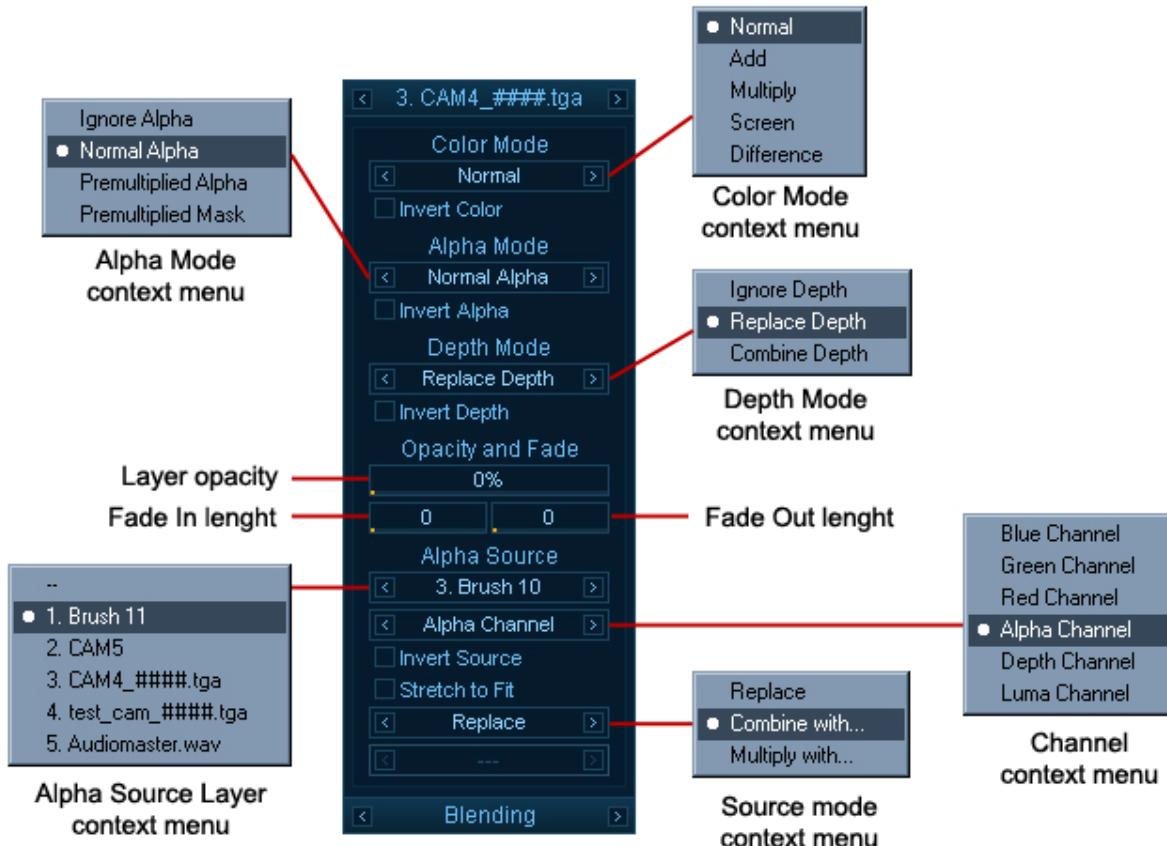


Figure 29. Blending Panel

The **Color Mode** section allows you to choose from five different color blending modes. They are **Normal**, **Add**, **Multiply**, **Screen** and **Difference**. You can cycle through them with the **Previous Mode** and **Next Mode** buttons or you can right click and choose a mode from the context menu. The next slider controls the Layer opacity in percent. You can invert the colors by checking the **Invert Color** box.

- **Normal** - This is the standard blend mode which simply takes each pixel from the top layer if present. Otherwise the bottom layer is used.
- **Add** - This blend mode simply adds pixel values of one layer with the other. In case of values above 256 (in the case of RGB), white is displayed.
- **Multiply** - Multiply blend mode multiplies the RGB numbers for each pixel of the top layer with the RRB number for the corresponding pixel from the bottom layer. As a simple multiplication can get values as high as 65025, which is far higher than the maximum allowed value, 255, the result is divided by 255. The result is a darker picture.
- **Screen** - With Screen blend mode the values of the pixels in the two layers are inverted, multiplied, and then inverted again. This is in some way the opposite of multiply. The result is a brighter picture.
- **Difference** - Difference subtracts the top layer from the bottom layer or the other way round, to always get a positive value. Blending with black produces no change, as values for all colors are equal to 0. (The RGB value for black is 0,0,0). Blending with white inverts the picture.

- The **Alpha Mode** section controls how the Alpha channel is applied. Again you can choose from several modes - **Ignore Alpha**, **Normal Alpha**, **Premultiplied Alpha** and **Premultiplied Mask**. You can cycle through them with the **Previous Mode** and **Next Mode** buttons or you can right click and choose a mode from the context menu. You can invert the alpha channel by checking the **Invert Alpha** box. The different alpha modes will yield different results when applied. The following explanations assume a **Normal** blending mode.
- Ignore Alpha** - The image is treated as fully opaque. The existing alpha channel (if any) is ignored. The alpha channel of the result will show a white rectangle.
- Normal Alpha** - The foreground color is mixed with the background color according to the formula:

$$\text{foreground} * \text{alpha} + \text{background} * (1 - \text{alpha})$$

As an example, a 70% opaque red foreground - (R:1.0, G:0.0, B:0.0, A:0.7) - and a green background - (R:0.0, G:1.0, B:0.0) - will be combined to form the color (R:0.7, G:0.3, B:0.0).

This blend mode is suited for images with independent color and alpha channels. These images can be color-corrected without running into problems with their transparent portions (such as antialiased edges) no longer blending correctly.

- Premultiplied Alpha** - The first portion of blend formula above - *foreground * alpha* - does not depend on the background color, so it's possible to perform it beforehand. This is known as pre-multiplication - the image color is pre-multiplied by the alpha channel. Such images are mixed with the background according to the modified formula:

$$\text{foreground} + \text{background} * (1 - \text{alpha})$$

Since the foreground has already been multiplied by the alpha, this produces the same results as the "Normal Alpha" formula when applied to the original, non-premultiplied image data.

Getting back to our example, the premultiplied equivalent of our foreground color (R:1.0, G:0.0, B:0.0, A:0.7) will be (R:0.7, G:0.0, B:0.0, A:0.7) and the result of its composition over a background color (R:0.0, G:1.0, B:0.0) will again be (R:0.7, G:0.3, B:0.0).

If a non-premultiplied image is composed over a black background - a color of (0.0, 0.0, 0.0) - the Normal Alpha formula gives us:

$$\text{foreground} * \text{alpha} + 0 * (1 - \text{alpha})$$

which is the same as:

$$\text{foreground} * \text{alpha}$$

In other words, the result of a non-premultiplied image composed over black is a premultiplied image.

The reverse operation - obtaining a non-premultiplied image from one that has already been premultiplied - can be accomplished in an image editing package by using the "Remove Black Matte" command.

(Note that the accepted terminology in this case - Normal Alpha and Premultiplied Alpha - is a bit confusing as it is the image color being premultiplied, not the image alpha.)

- **Premultiplied Mask** - In a standard dynamic range image, the values of the color channels are between 0.0 and 1.0 (inclusive). This means that a premultiplied image would never have a color value bigger than the corresponding alpha value (because the maximum color value of 1.0, multiplied by an alpha value A, yields A).

Not all images conform to this rule, though. It is not uncommon to come across a premultiplied image in which some pixels have a color value bigger than the alpha value.

This may be intentional and can represent high dynamic range (color values higher than 1.0) or an additive glow (non-zero color values in areas where the alpha is zero).

Sometimes the image data is not intended to contain such color values. Using Premultiplied Alpha with such images can lead to compositing artifacts. In these cases, one can use the Premultiplied Mask mode, which is the same as Premultiplied Alpha, except that it clamps the color value to the alpha value, effectively constraining the colors into the safe 0.0 - 1.0 range.

The next two pictures illustrate the difference between **Premultiplied Alpha** and **Premultiplied Mask**.

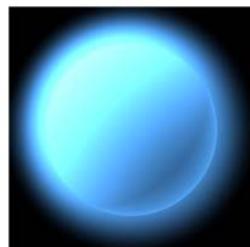


Image A

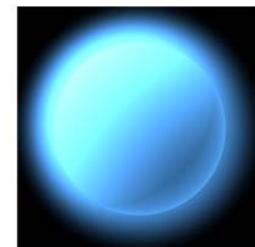


Image B

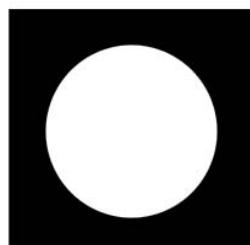


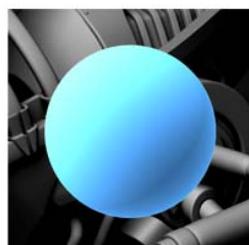
Image A alpha channel



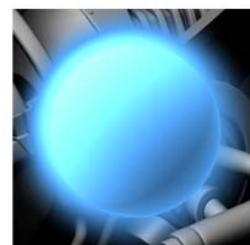
Image B alpha channel



Composite using
Premultiplied Alpha



Composite using
Premultiplied Mask



Composite using
Premultiplied Alpha



Composite using
Premultiplied Mask

Figure 30. **Premultiplied Alpha** and **Premultiplied Mask**

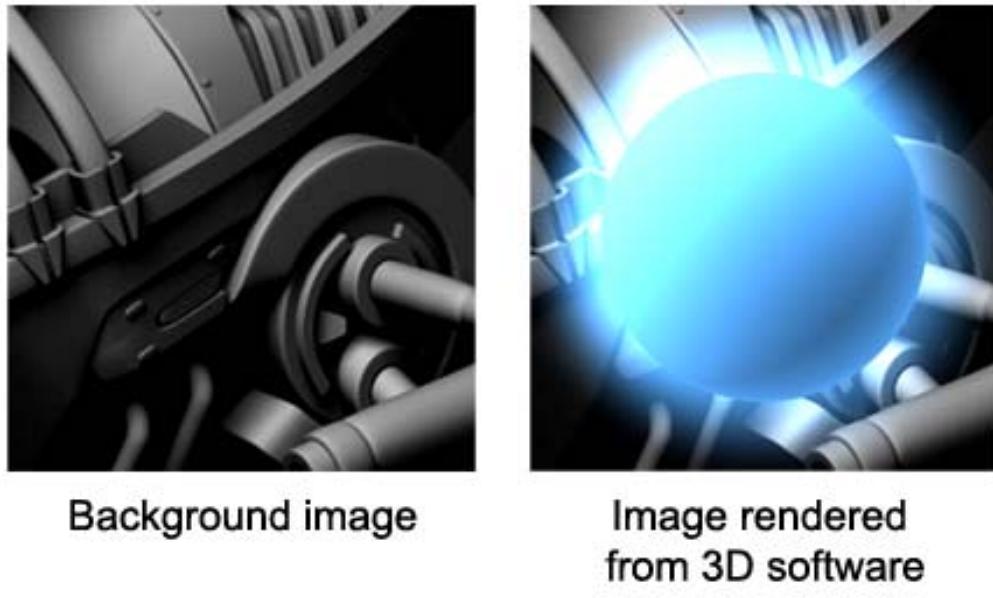


Figure 31. Image rendered with 3D software

The **Depth Mode** parameter allows you to choose from three blending modes for the depth channel. They are **Ignore Depth**, **Replace Depth** and **Combine Depth**. You can cycle through them with the **Previous Mode** and **Next Mode** buttons or you can right click and choose a mode from the context menu.

Opacity and Fade – the next three sliders control the **Opacity** and **Fade** effects for the current layer. The first controls the **Opacity** – you can drag it to change the opacity or right click and reset its value from the context menu. The next two sliders allow you to animate the **Opacity** of the layer in order to achieve Fade-in and Fade-out effects. The opacity will always be animated from 0% to its current value or vice versa. The left and right sliders control the length (in frames) of the Fade-in and Fade-out effects respectively. A value of 30 for the left slider means that the **Opacity** of the layer will be animated from 0% to its current value for 30 frames. The animation will start at the beginning of the sequence or at the **In point** if there is one. A value of 30 for the right slider means that the **Opacity** of the layer will be animated from its current value to 0% for 30 frames. The animation will start 30 frames before the end of the sequence or the **Out point** if there is one.

Pdplayer gives you the option to assign any channel from any layer in the scene to act as alpha channel for the current channel. This is done through the **Alpha Source** options. First you must select a layer to act as a source. You can do that by cycling through the available layers with the right and left arrow or by right clicking on the layer chooser and picking a layer from the Alpha Source context menu. Next you select a channel from the layer to be used as Alpha source. Again you can cycle through the different channels in the layer or right click on the channel chooser and select a channel from the Channel context menu. Next you have the option to choose whether or not to invert the source channel and if the two layers have different sides you can choose to stretch the source layer to fit the current one. Then you can choose a blending mode for the source channel. The available options are **Replace**, **Combine with** and **Multiply with**. Finally you can choose with which channel from the current layer you'd like the source channel to blend. You can choose either by cycling through the options within the layer chooser with the left and right arrow or by right clicking on it and choosing a channel from the Channel context menu.

IV.5.d. Text Panel

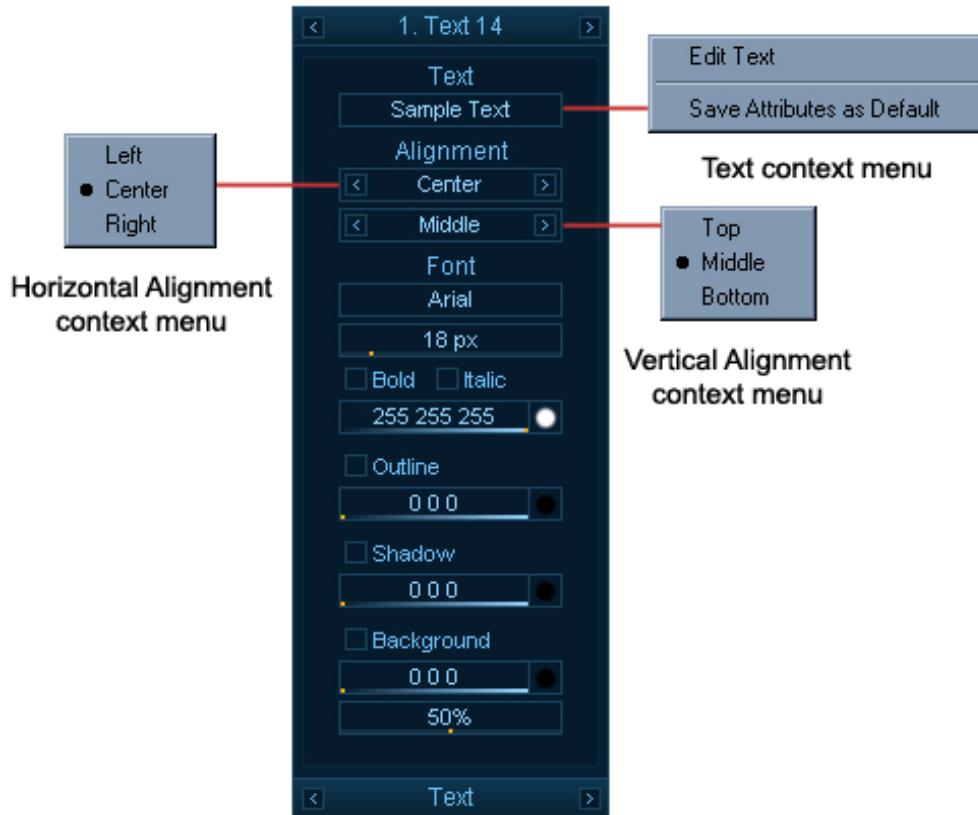


Figure 32. Text Panel

The next panel in the Property Panel is the Text Panel (Figure 32). It is active when you have selected a **Text Layer** and it allows you to control its settings. The first field holds the actual text that is displayed by the **Text Layer**. You can change it by double clicking on the Text field or by holding Shift and double clicking on the **Text Layer** in the Preview Area. Next you have controls for the horizontal and vertical alignment along with settings for the Font, Size and color of the Text. The following controls allow you to add some effect like Outline and Shadow to the text. The last settings allow you to put a background color for the text and set a transparency for that background.

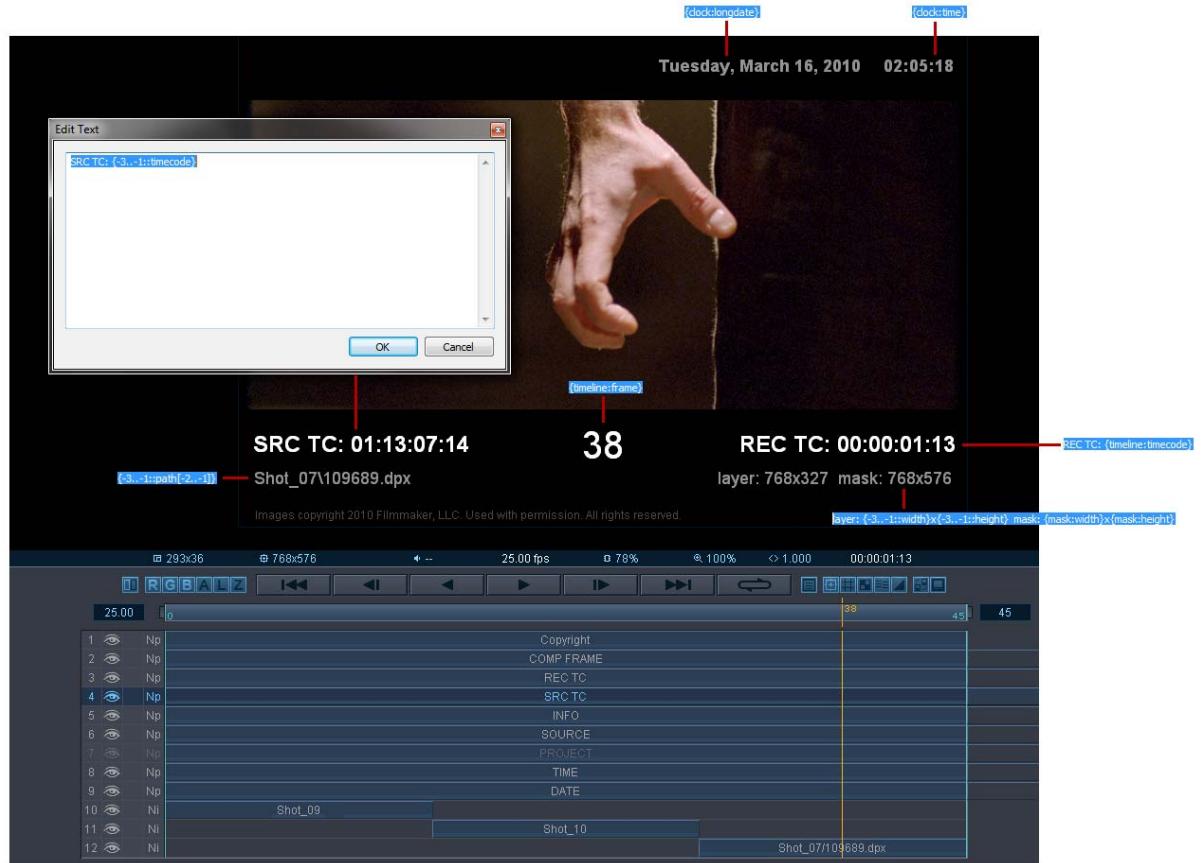


Figure 33. Text fields

The text in text layers may contain embedded fields of the form {object:property} (Figure 33). Such fields are replaced with their values before the text is displayed. For example, {timeline:frame} is replaced with the current frame, and {4:timecode} is replaced with the embedded timecode of layer 4. This is useful for burn-ins when creating previews and dailies. For more information about the syntax check the Text fields reference (Section XII.)

IV.5.e. Effects Panel



Figure 34. Effects Panel

The Effects Panel (Figure 34) allows you to apply Color Key to your Sequence or Video Layers. **Pdplayer** currently supports two Color Keys which will be applied on the fly. To cut out a color from your sequence enable the **Primary Key**, right click on the color in the **Preview Area** and copy it. Then paste that color in the color field. You can use the sliders below to adjust the **Slope** and **Tolerance**. In order to use the **Secondary Key**, first you need to disable the **Primary Key** and then complete the same procedure. Once you have adjusted the settings for the **Secondary Key** you can then enable the **Primary Key**. You can also enable or disable the preview of a **Border** and a **Safe Area** for each layer by enabling or disabling the respective check boxes.

IV.5.f. Brush Panel

The next panel in the Property Panel is the Brush Panel (Figure 35). It is available when you have selected a Brush Layer or a Brush Sequence Layer (Section VI.1.b).

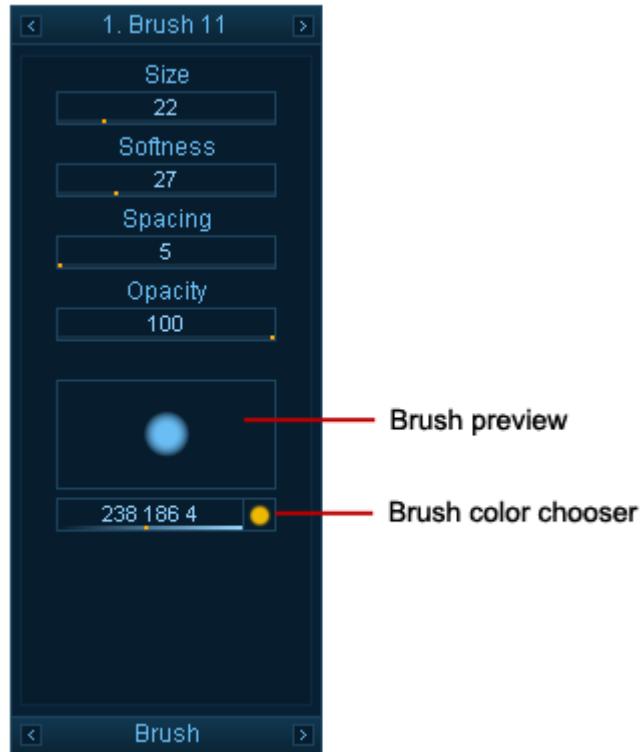


Figure 35. Brush Panel

In the Brush Panel you have four sliders to control the **Size**, **Softness**, **Spacing** and **Opacity** of the brush. You can change their values like you do with all sliders – by dragging the slider or by double clicking on the slider and entering a number in the box. You can also hold down ctrl key and drag up and down in the preview area to change the brush **Softness** and left and right to change its **Size**. Two more elements are present in the Brush Panel. First there is the Brush Preview which shows you the size and softness of the brush. Second there is the Brush color chooser which allows you to choose a color for the brush.

IV.5.g. Source Panel

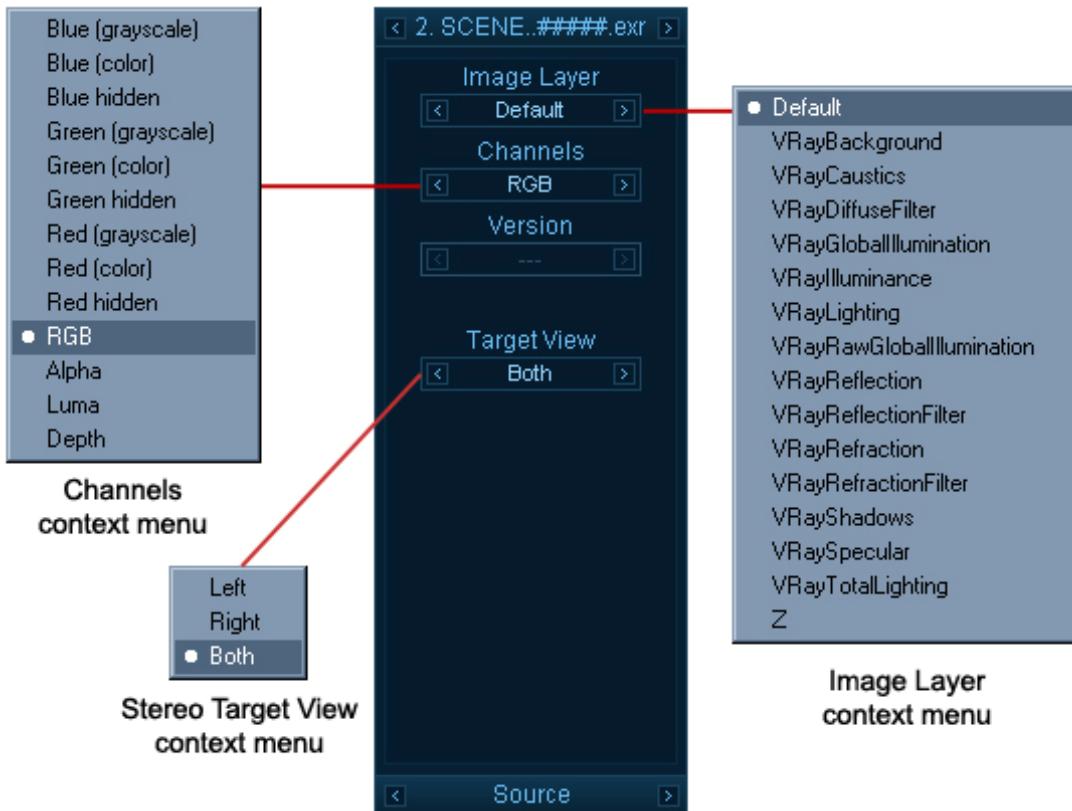


Figure 36. Source Panel

The **Source** panel (Figure 36) is the last tab of the **Property panel**. The first field allows you to view custom layers (other than RGB, Alpha, Luma and Z-Depth) inside .vrimg and .exr files. You can either flip through the layers by clicking on the **Previous** and **Next** buttons or you can right click and select a layer from the drop down menu. Switching between the different layers causes the image to be reloaded which may cause a small delay.

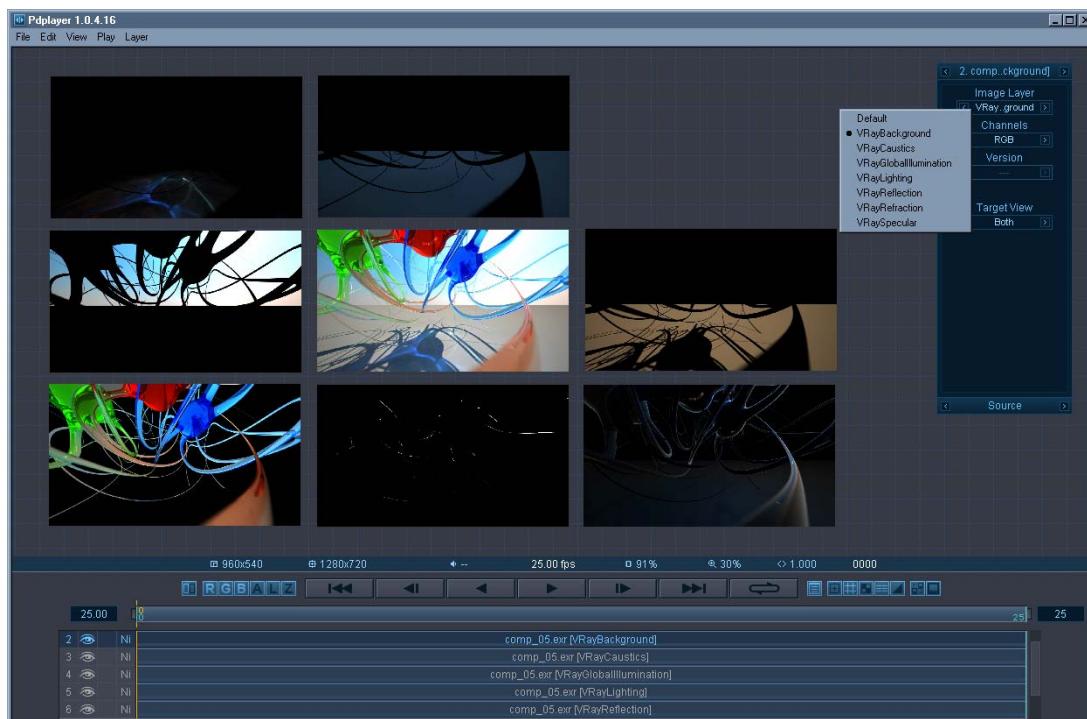


Figure 37. Different layers of a an EXR file

Figure 37 shows a composition in which a single EXR file with render elements has been split into layers. On the left we can see the RGB part of the image. The left image is created by composing the render elements together using the **Add** operator. It is clearly visible that the two images look the same. However using render elements allows for much more control when applying color corrections for example.

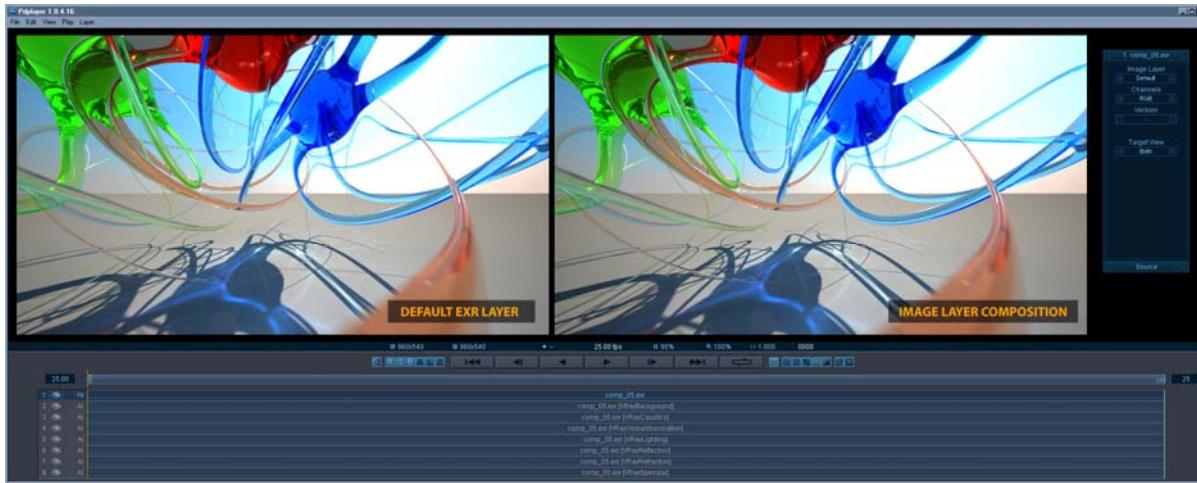


Figure 38. Open EXR with Render Elements

The **Channels** field allows you to display different channels of the current layer. You can either flip through the different channels or right click and select a channel from the drop down menu.

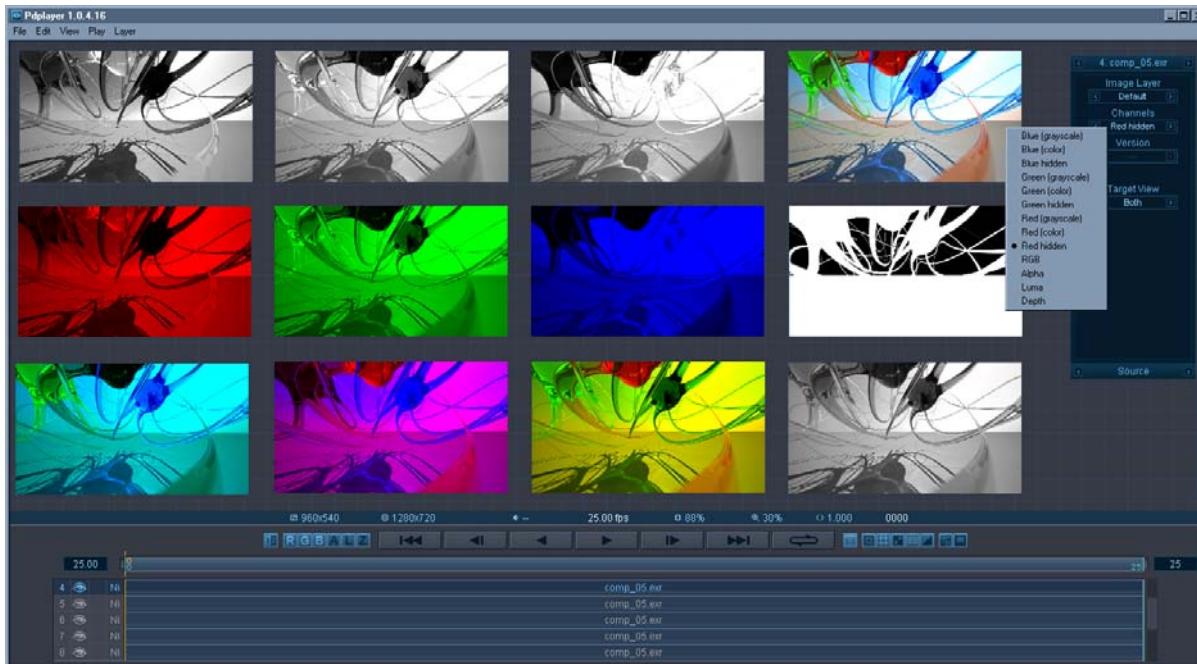


Figure 39. Different channels of an image

The **Version** field is enabled when **Pdplayer** detects that you have loaded a sequence which has several versions. It will detect certain key words in the file path and find the other versions automatically. You can then cycle through the versions with the Previous and Next buttons or right click and choose from the drop down menu.

Pdplayer will recognize versioned footage when the file path contains a directory with a name of the form `prefix_v#_suffix`, where `prefix` and `suffix` are arbitrary strings, and `#` is a sequence of digits. The `prefix_` and `_suffix` parts are optional. Examples of versioned directory names: `v2`, `V004`, `v04_before_cc`,

animation_v05, scene_v2_2009_05_31. The version string is automatically replaced in the file name, if present.

Examples of versioned footage:

- **Example 1**

```
D:\shot08\scene_15\v02\bg\bg_v02_0001.tga  
D:\shot08\scene_15\v03\bg\bg_v03_0001.tga
```

- **Example 2:**

```
C:\projects\promo\v2_before_cc\0001.tga  
C:\projects\promo\v3_after_cc\0001.tga
```

- **Example 3:**

```
X:\Footage\conv\V002_2009_05_27\conv_proxy_h264.mov  
X:\Footage\conv\V003_2009_05_31\conv_proxy_h264.mov
```

- **Example 4:**

```
D:\shot08\scene15_v2\bg\shot08_scene15_v2_bg_0001.tga  
D:\shot08\scene15_v3\bg\shot08_scene15_v3_bg_0001.tga
```

- **Example 5:**

```
C:\projects\promo_v2_before_cc\v2_0001.tga  
C:\projects\promo_v3_after_cc\v3_0001.tga
```

- **Example 6:**

```
X:\Footage\conv\V002_2009_05_27\conv_V002_proxy_h264.mov  
X:\Footage\conv\V003_2009_05_31\conv_V003_proxy_h264.mov
```

Pdplayer will automatically recognize when you have added versioned footage and it will enable the Version field.

The next option allows you to select a target for the current layer when using the Stereoscopy feature of **Pdplayer** (Section V). You can either scroll through the options or right click and choose from the drop down menu.

IV.5.h

R3D Panel

Pdplayer natively supports R3D files – the raw format produced by the RED ONE camera. The R3D panel (Figure 40) allows the user to control the way those files are displayed within Pdplayer.

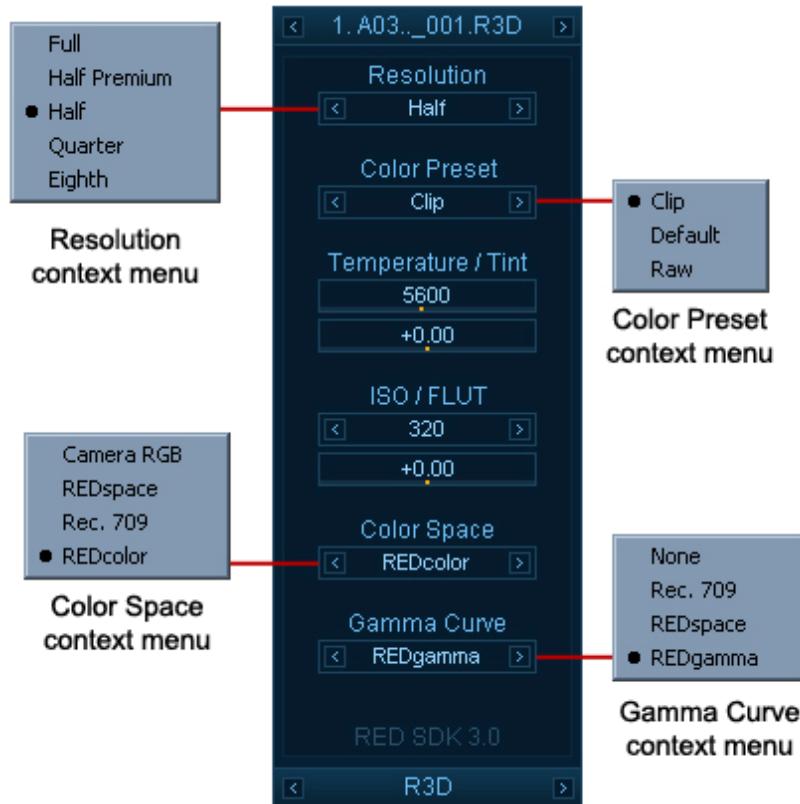


Figure 40. R3D Panel

The **Resolution** control allows you to specify the resolution at which the sequence is going to be displayed. The user can also choose a **Color Preset** and change the **Temperature** and the **Tint** of the composition. The next two options control the **ISO** and **FLUT**. Finally the user is given options to choose the **Color Space** and **Gamma Curve** for the current sequence.

V. Stereoscopy Support

V.1. General Information

Pdplayer has built-in support for playback of stereoscopic sequences. Currently there are four different methods for stereoscopy supported – **Red/Cyan Anaglyph**, **Green/Magenta Anaglyph**, **Interlaced** and **Checkerboard**. All can be used directly without having to apply any color corrections or masks.

V.2. Setting up the Composition

V.2.a. Quick Set-up

Using **Pdplayer** you can very quickly set-up a stereoscopic composition. You can use either two separate sequences – one for each view or you can load an SXR sequence. The SXR sequence is an Open EXR sequence that holds both the left and the right views as separate layers within the same file.

To automatically set-up the stereoscopic composition just check the **Add other stereo view** check box in the **Add Layer** dialog:

- If you are loading an SXR file **Pdplayer** will automatically detect the left and right channels and make the correct set-up.
- When loading a non SXR sequence **Pdplayer** will examine the path and file name of the sequence. It recognizes certain key words and based on them tries to find and load the other channel of the stereo sequence. The following words are recognized:

"left", "Left", "LEFT", "L", "lf", "LF" identify the left view
"right", "Right", "RIGHT", "R", "rt", "RT" identify the right view

Once **Pdplayer** has identified both views it will automatically set up the stereoscopic composition.

If you are adding the sequences in **Pdplayer** without using the **Add Layer** dialog you can use the **Add Other Stereo View** command from the **Layer** menu to automatically set up the composition. The same command can be found in the layer context menu by right clicking on a layer in the Layer Stack. This command will perform the same operations as the **Add other stereo view** check box and works with both SXR and non SXR sequences.

Once the composition has been set you can use the stereoscopic view button (next to the channel view buttons) to cycle between left, right and stereo views.

V.2.b. Manual Set-up

To manually set up a stereoscopic composition you need to do perform the following steps:

- First you need to load the sequence for the left and right channel in **Pdplayer**. (Section III.1)
- In the **Source** tab of the **Property Panel** select each layer and specify its target. (i.e. set the **Target View** for the left channel to **Left** and for the right channel to **Right**).



Figure 41. Setting up the Left and Right views

- You can toggle between the **Left**, **Right** and **Stereo** view in the **Preview Area** by clicking on the Stereoscopic view button (next to the Channel view buttons).
- To select the Stereoscopy method right click on the Stereoscopic view button and select the method from the drop down menu. You can choose between four different methods: **Red/Cyan Anaglyph**, **Green/Magenta Anaglyph**, **Interlaced Stereo** and **Checkerboard**.

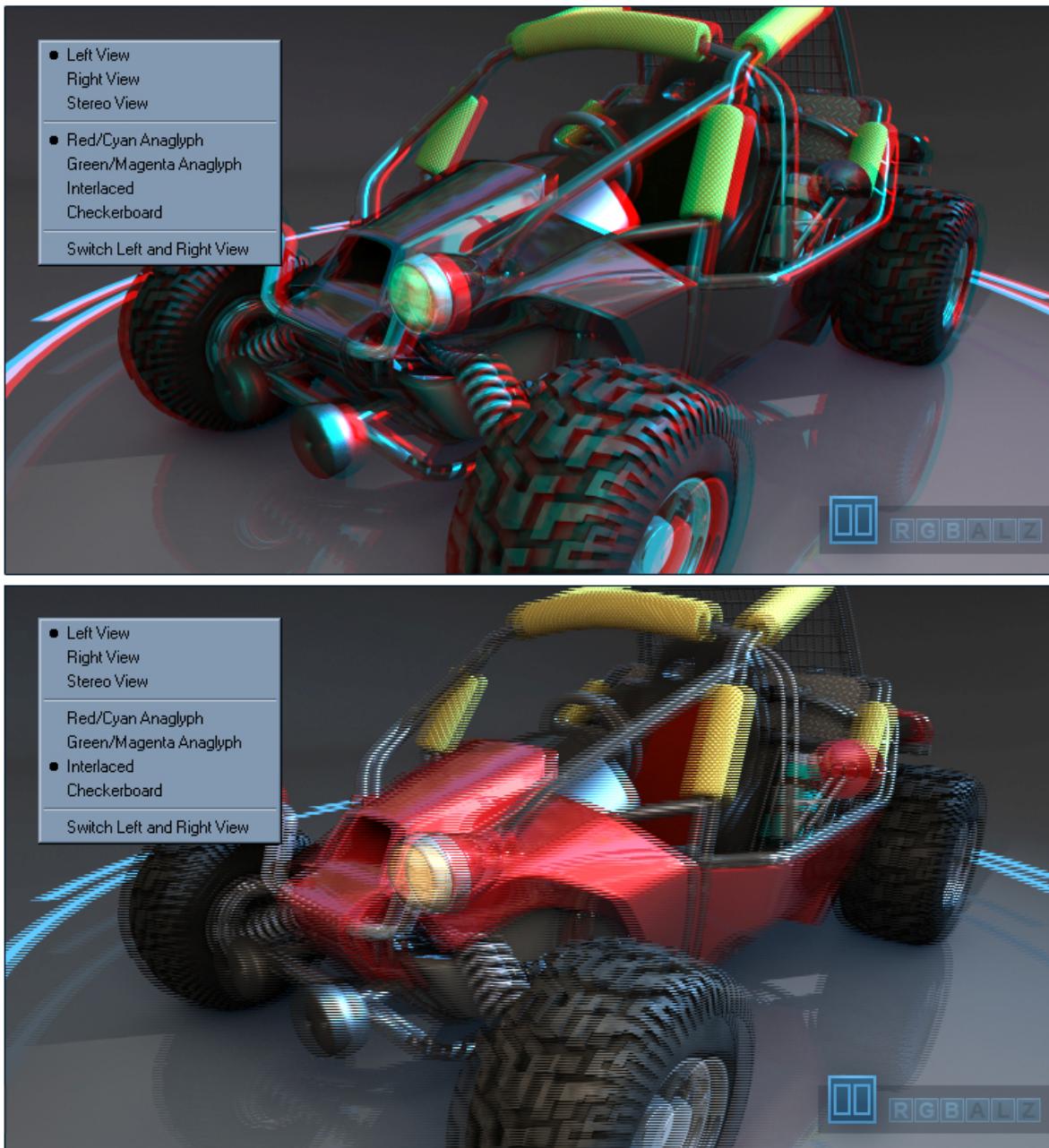


Figure 42. Anaglyph and Interlaced Stereo

VI. Layers

VI.1. Layer Types

One of **Pdplayer**'s unique features is its ability to process multiple layers at the same time. Furthermore it can handle different types of layers and layers with different type of content without the need of complex procedures. All you need to do to add any kind of media content to a layer is drag and drop. **Pdplayer** provides several types of layers divided into normal and special layers according to their functions.

VI.1.a. Normal Layers

- **Still Image Layer** – a normal layer with a single image loaded in it. This image will appear on each frame no matter how many frames there are.
- **Sequence Layer** – a layer containing a sequence of images
- **Movie Layer** – a layer with a movie file loaded in it.
- **Audio Layer** – a layer containing an audio file.

All these layers can be loaded in **Pdplayer** simply by dragging and dropping. **Pdplayer** will automatically add the correct type of layer according to the type of the file you have dropped.

VI.1.b. Special Layers

- **Brush Layer** – a still layer that you can draw on. Whatever is drawn on this layer will be shown on all frames.
- **Brush Sequence Layer** – a brush layer that keeps information for each frame. This means that you can have different drawings on different frames.

Both brush layers are meant to be used for putting notes in the composition.

- **Adjustment Layer** – it allows us to apply color corrections to multiple layers globally. The color corrections that you make to an adjustment layer will be applied to all layers under it in the **Layer Stack**. If you make this layer invisible the effect of the color corrections will also be not visible.
- **Embedded Image Layer** – this layer is created when there is an image of any kind in the clipboard and you paste it in the composition or when you paste a frame as an **Embedded Image**. It behaves as a still image layer with the only difference that it can be saved within the .pdpcomp file.
- **Embedded Audio Layer** – this layer is created when an **Audio Layer** that contains a .WAV file is embedded into the composition with the **Embed Layer** command from the **Layer** menu.
- **Text Layer** – the text layer is a special kind of layer that allows you to put notes on your composition. You can control the settings for the text layer from the Text tab of the Property Panel.
- **Video Layer** – the video layer is a **Pdplayer** specific type of layer which allows you to insert live video footage inside **Pdplayer**. To do this just go to **Edit>New Video Layer>** and select from list of video devices that are currently attached to your computer.
- **Frame Buffer Layer** – the frame buffer layer is very similar to the clip board layer. The only difference is that the input comes from an external source. For the moment **Pdplayer** supports input only from V-Ray and LightWave

VI.2. Working with Layers

Once you have added layers to your composition you may want to arrange them. You can change how different layers stack over each other by dragging them in the layer stack. It is important to know that only the part of a layer which is inside the work area will be displayed. You can further limit which parts of a layer will be shown by adding **In** and **Out Points** to it. This is done by dragging the edges of a layer. If you drag the right edge of a layer outside of it Pdplayer will automatically add a loop for this layer. Double clicking on an **In Point** will reset it to 0 and double clicking on an **Out Point** will move it to the next complete loop. Right clicking on a layer will bring out the layer context menu which holds some additional commands.



Figure 43. Layer context menu

- **Delete Selected** – deletes the layer from the composition.
- **Half Width Left** – moves the layer half of its resolution width to the left in the work space.
- **Half Width Right** – moves the layer half of its resolution width to the right in the work space.
- **Preload into Cache** – loads the sequence into the cache without playing it.
- **Disable Caching** – disables caching of the layer and forces direct playback from disk.
- **Remove Layer from Cache** – Removes the layer from the cache so in the next play back it will be reloaded from the hard drive.
- **Duplicate** – Duplicates the selected layer. The new layer will become selected and will appear over the original layer.

- **Duplicate and Split** – Duplicates the selected layer and sets the **Out point** one frame before current time. The new layer will become selected and the **In point** will be set at current time.
- **Expand into Layers** – this option is available only for .vrimg and .exr sequences which have additional layers inside. When executed this command creates additional layers in the composition each of which is displaying one of the layers in the .vrimg or .exr sequence.
- **Add Other Stereo View** – adds the other stereo view of a stereo sequence. **Pdplayer** recognizes certain key words in the path and file name of the loaded sequences in order to find and load the other part of the stereo sequence. The following words are recognized:

"left", "Left", "LEFT", "L", "lf", "LF" identify the left view
"right", "Right", "RIGHT", "R", "rt", "RT" identify the right view
- **Resize to Timeline** – resizes the current **Still image Layer** or **Embedded Image Layer** to the length of the **Timeline**.
- **Resize to Work Area** – resizes the current **Still image Layer** or **Embedded Image Layer** to the length of the **Work Area**.
- **Replace with...** – opens the standard Open File dialog so a new file which will replace the current can be selected. All settings of the layer will be preserved. In case you have multiple layers selected you will have to specify the root folder in which the sequences are placed.
- **Update Modified Frames** – checks which frames have been updated on the disk since the last caching and removes them from the cache, so they can be reloaded on the next playback.
- **Automatic Update** – when this option is on **Pdplayer** will continuously scan for updated frames and reload them in the cache when needed.
- **Rescan Sequence for New Frames** – checks the sequence for additional frames.
- **Watch Sequence for New Frames** – continuously watches the sequence for additional or removed frames.
- **Copy Layer and Frame** – copies the current frame and layer into the clipboard (in .pdpcomp file format). It can later be pasted either as a **Sequence Layer** or a **Still Image Layer** in any **Pdplayer** window.
- **E-mail Frame as JPEG** – emails the current frame of the selected layer in a .jpg format using the system's default e-mail client.
- **E-mail Frame as PNG** – emails the current frame of the selected layer in a .png format using the system's default e-mail client.
- **Embed Layer** – embeds a **Still Image Layer** or an **Audio Layer** (containing a .WAV file) in the composition so that it can be saved in the in the .pdpcomp file.
- **Locate in Explorer** – opens the original location of the layer in Windows Explorer.
- **Open with...** – Opens the standard Windows List with programs so you can choose in which program to open the selected layer from within **Pdplayer**.

VII. HTTP Server for Remote Collaboration

VII.1. Starting the Server

The HTTP Server for Remote Collaboration is a build in http server that comes with **Pdplayer**. When you start the server your computer will host a web page that will display the current frame that **Pdplayer** is displaying. This option is useful for showing your compositions to people over the internet. To start the server all you have to do is press the **Toggle web server** (Figure 44 – button 7) button from the control buttons.

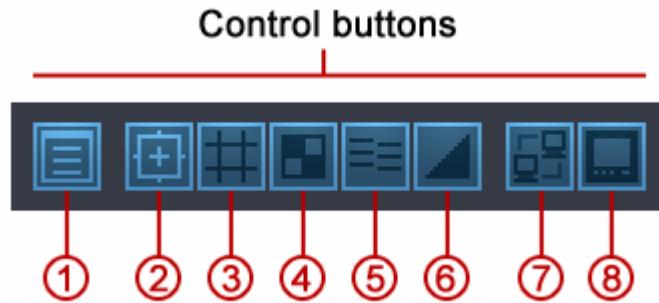


Figure 44. Button 7 – Toggle web server

Right click on the button to bring out the context menu (Figure 45). From here you can copy the address on which the web page displaying the sequence can be found. You can also directly open the page in the default browser for you to view.

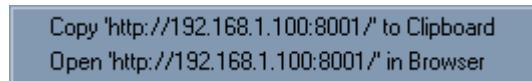


Figure 45. HTTP Server context menu

VII.2. Customizing the Web Page

Figure 46 shows the default look of the web page for remote collaboration. The index.HTML file is stored in \Program files\pdplayer\httpdocs\.

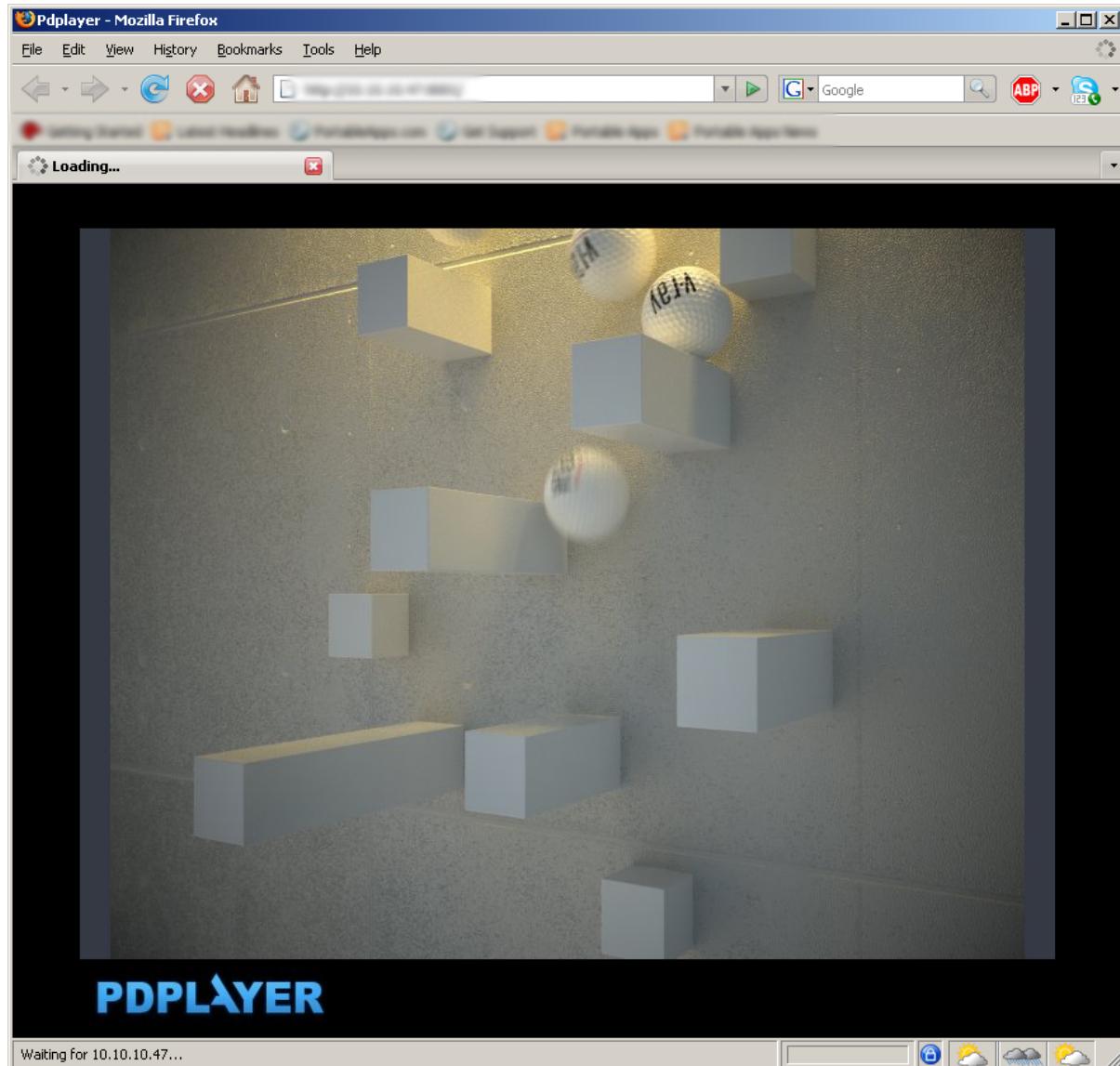


Figure 46. Pdplayer Web page

```
<html>
<head>
<title>Pdplayer</title>
</head>
<body bgcolor="Black">
<div style="position: absolute; top: 48%; left: 50%; margin-top: -288px; margin-left: -384px;">
<iframe src="768,576?refresh=2" width="768" height="576" scrolling="no" marginwidth="0" marginheight="0" frameborder="0">
</iframe>
<br>

</div>
</body>
</html>
```

Figure 47. Index.html

Figure 47 shows the HTML code of the index.html. Editing this HTML will affect the look and functionality of the web page. In order to be able to fully customize this web page you need to know how it functions. The built-in http server is a standard web server. Making a query to it that says <http://localhost:8001/768,576> it will return a picture of the current view in **Pdplayer** with resolution of 768 by 576. As an example if you would want to use the original html but have the picture resolution see to 800 by 600 pixels you will have to change few things in the HTML code.

First of all you have to ask the web server for the picture with resolution of 800 by 600 pixels. In our case this is done with the following code:

```
<iframe src="800,600?refresh=2" width="800" height="600" scrolling="no" marginwidth="0" marginheight="0" frameborder="0">
```

First you have to define the source for the iframe this is done with the `iframe src="800,600?refresh=2"` part of the code. Here you declare that every two seconds iframe will be refreshed with an image with resolution of 800 by 600 pixels. You also have to set the size of the iframe this is done with the `width="800" height="600"` part of the code.

```
<div style="position: absolute; top: 48%; left: 50%; margin-top: -300px; margin-left: -400px;">
```

VIII. Pdplayer Integration

VIII.1. Extended Command Line Support

VIII.1.a. Overview

Pdplayer's extensive command line support allows you to have full control over Pdplayer through any external application that can pass commands to it. The set of commands and their function is explained in the pdplayer.cmdline.txt file that can be found in the installation directory of Pdplayer. The general form of a Pdplayer command line is:

```
"C:\Program Files\pdplayer\pdplayer.exe" [--attach] <options> layer1 <layer-options> layer2 <layer-options> ... [--exit]
```

where *<options>* are the global (composition) options and *<layer-options>* are the layer-specific options that are applied to the layer that was last added.

A full reference of the options is available in Section XI

VIII.1.b. System Options

The optional --attach should be the first option. If it's absent, a new instance of Pdplayer is started with the specified options. If --attach is present, the command line is sent to an existing instance of Pdplayer, which then executes it. If no Pdplayer instances are active, a new one is started. If several Pdplayer instances are active, a random one among them is chosen.

The optional --exit should be the last option. It makes Pdplayer exit after processing the command line and before creating the main window. This is useful for batch conversions.

The --cmdfile=file.ext option instructs Pdplayer to read the text file file.ext and to execute the commands in it as if they were given directly on the command line.

VIII.1.c. Layers

- **layerN** represents the file name (or names) of the source of the new layer. For still images and movies, it is the name of the file. For sequences, it can have the following forms:
 - **path/file014.ext** - names one frame of the sequence. Pdplayer will automatically detect that the file is part of a sequence by examining the trailing digits in the name. Both \ and / are valid as path separators.
 - **path/file####.ext** or **path/file????.ext** - the ? or # characters are automatically replaced with digits as appropriate.
 - **path/file%04d.ext** - the %04d is equivalent to #####, where the number of the # characters corresponds to the number before the d. Supported for Nuke compatibility.
 - The file name can be followed by the **--range** option, which has the following general format:

--range=B1-E1/S1,B2-E2/S2...

where Bi is the start frame, Ei is the end frame, and Si is the frame step. -Ei and /Si are optional. As an example,

test.####.tga --range=1-4,100-200/20,204,207

represents the sequence

```
test.0001.tga
test.0002.tga
test.0003.tga
test.0004.tga
test.0100.tga
test.0120.tga
test.0140.tga
test.0160.tga
test.0180.tga
test.0200.tga
test.0204.tga
test.0207.tga
```

VIII.1.d. Examples

Building a simple PAL composition from the command line

```
start pdplayer --fps=25 --global_aspect=1.067 --back_color=black --
mask=720,576 d:\footage\back0001.tga --alpha=ignore --brightness=0.1
d:\footage\front0001.tga -blend=add --opacity=20
```

Batch converting an EXR sequence to TGA

```
start pdplayer d:\footage\seq0001.exr --exposure=-0.5 --soft_clip=3.5 --
save_layer_as=d:\footage\seq2.tga -exit
```

Creating a quick time H.264 movie from a sequence

```
start pdplayer d:\footage\seq2.0001.tga --
save_layer_as=d:\footage\seq2.mov,avc1 --exit
```

VIII.2. Pdplayer and Autodesk Maya

Pdplayer can very easily be integrated with Autodesk Maya to view single images or sequences. To do this, open the Preferences dialog in Maya and in the Applications Category choose **Pdplayer** to be used as the default software for viewing images and sequences (Figure 48). You should also put %f in each Optional Flags field in order to specify the file name.

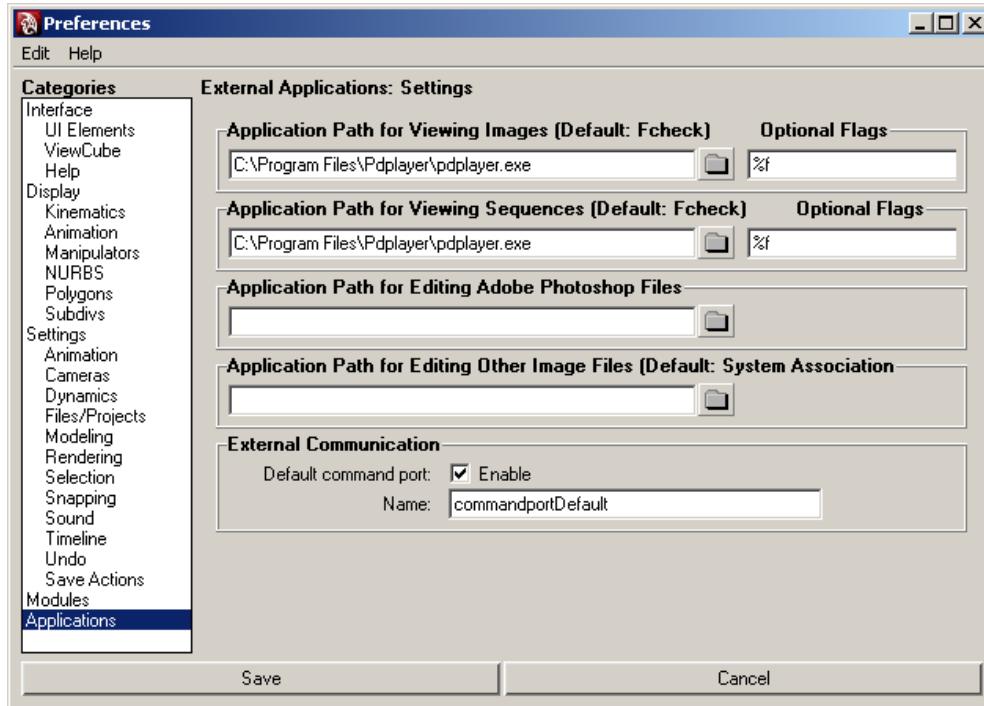


Figure 48. Integration with Autodesk Maya

VIII.3. The Lightwave Plug-in

The **Pdplayer** installation comes with a plug-in for Lightwave. The plug-in files can be found in the `\Program Files\pdplayer\extras\lightwave` folder. There are two files - **pdplayfb.p** and **pdplayfb64.p** for the 32 bit and the 64 bit versions of Lightwave respectively. In order to use the plug-in you must copy the corresponding file into your Lightwave plug-in folder and install it. After doing that you can access the plug-in from the Render Globals>Render Display menu (Figure 49).

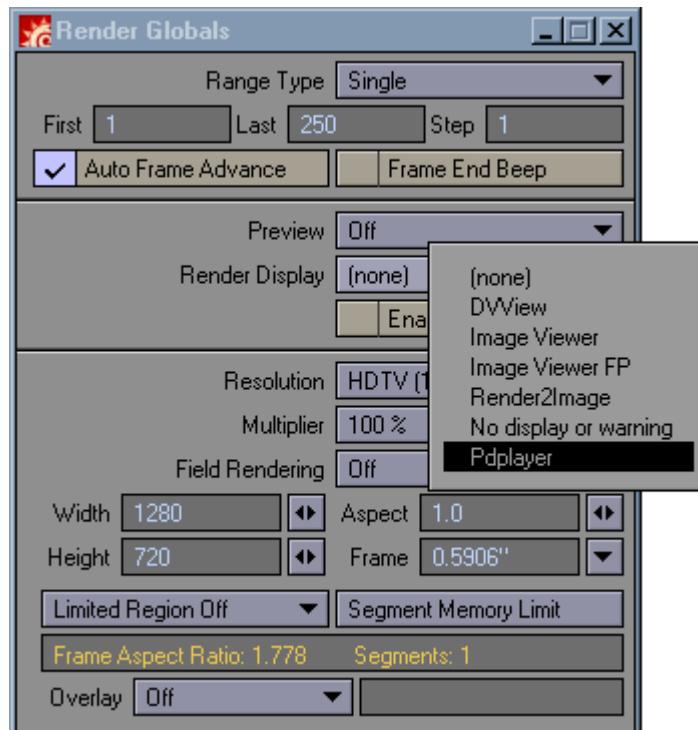


Figure 49. Render Globals

After selecting **Pdplayer** from the Render Display menu you can assign the default color space in which the images will be shown in **Pdplayer** (Figure 50).

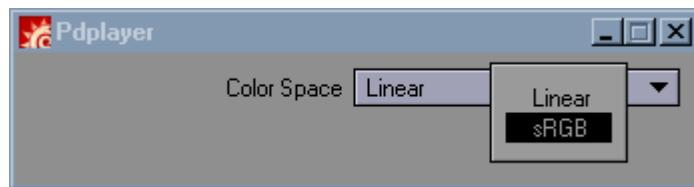


Figure 50. Color Space selection

If you are using the Lightwave Default Image Viewer you can always send the current render to **Pdplayer** (Figure 51). A new Framebuffer Layer holding the current render will appear in **Pdplayer** every time the Send Image command is executed.

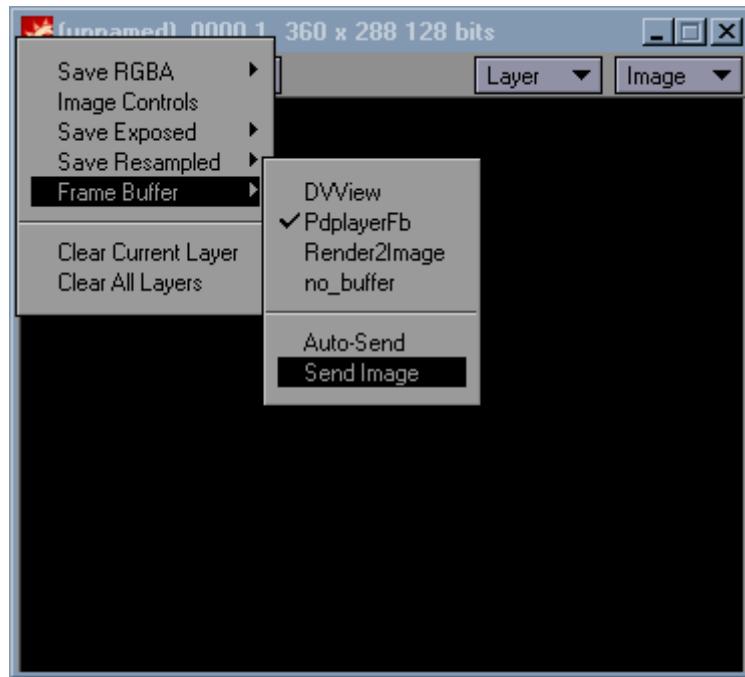


Figure 51. Send Image to Pdplayer

VIII.4. Pdplayer and Nuke

In addition to exporting compositions to Nuke Script (Section III.4) **Pdplayer** can be further integrated with Nuke with the use of the Nuke integration script that comes with **Pdplayer**.

The script can be found in C:\Program Files\Pdplayer\extras\nuke folder.

To integrate **Pdplayer** within Nuke 5 you need to copy the file named **nuke.py** in .../plugins/user folder in the Nuke installation folder. This will add a new command in the Render menu (Figure 52) that will allow you to view your work in **Pdplayer**.

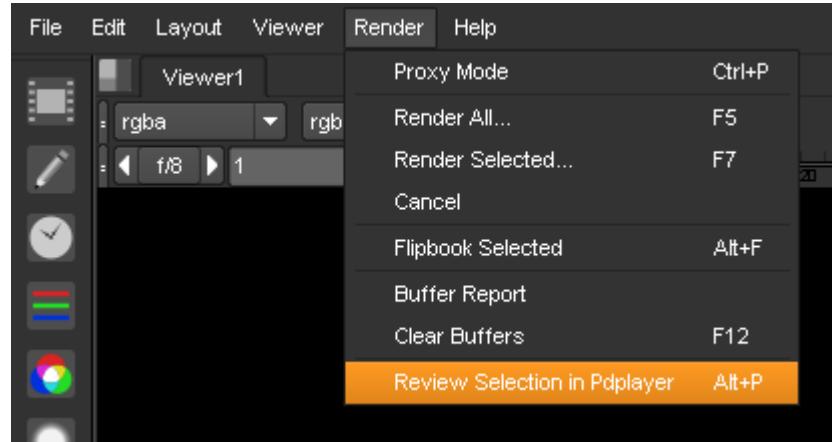


Figure 52. **Pdplayer** integration for Nuke 5

To integrate **Pdplayer** in Nuke 4 you need to copy the files **menu.tcl** and **Pdplayer_this.tcl** to the .../plugins/user folder in the Nuke installation folder. Once you install the integration script, you will be able to review your composition with **Pdplayer**.

IX. Menu

The menu is an organized collection of all the commands you have available in **Pdplayer**. They have been grouped in five menus according to their function. The following table shows the five groups and explains the commands in them:

IX.1. File Menu

Figure 53 shows the file menu. It holds the basic commands for handling files.

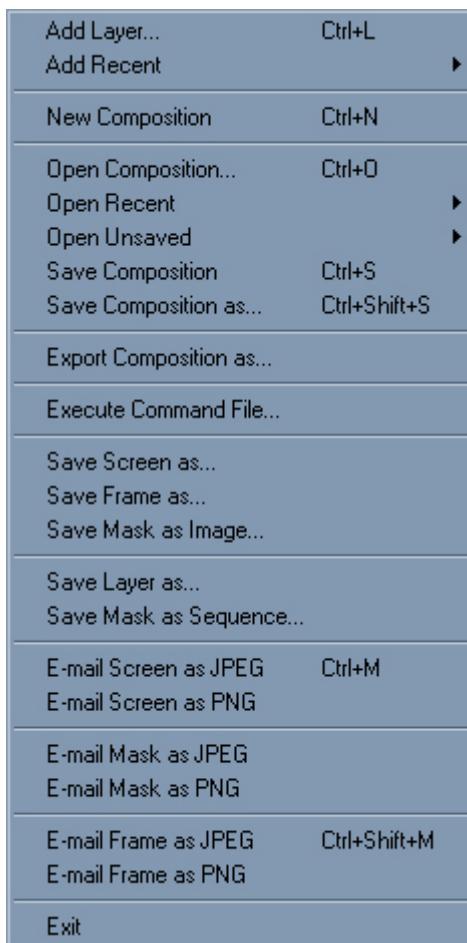


Figure 53. The File Menu

- **Add Layer** – opens the standard Open File dialog (Figure 4) to select a file to be added as a new layer.
- **Add Recent** – shows a list of recently added files.
- **New Composition** – closes the current composition.
- **Open Composition** – Opens a composition saved in .pdpcmp format.
- **Open Recent** – Shows a list of recently opened compositions.
- **Open Unsaved** – Shows a list of recently closed or reset compositions that were not saved.
- **Save Composition** – Saves the changes made to the current composition file.
- **Save Composition as...** – Saves a new .pdpcmp composition file.

- **Export Composition as...** – Exports composition as Adobe After Effects **.jsx** script, The Foundry Nuke **.nk** script or **.pdpcmd** command file (Section III.4).
- **Execute Command File...** - executes the commands in a **.pdpcmd** file.
- **Save Screen as...** – Saves a screenshot of the interface as file.
- **Save Frame as...** – Saves the current frame of the selected layer as file.
- **Save Mask as Image...** - Saves the part of the composition that is currently visible in the mask as an image in one of the five supported file formats. All transformations and color corrections are applied.
- **Save Layer as...** – Saves the selected layer as a sequence or a still image with the original resolution and color correction applied.
- **Save Mask as Sequence...** – Renders the work area with the current mask resolution as a sequence. All transformations and color corrections are applied.
- **E-mail Screen as JPEG** – Emails a screenshot of the **Pdplayer** window in a **.jpg** format using the system's default e-mail client.
- **E-mail Screen as PNG** – Emails a screenshot of the **Pdplayer** window in a **.png** format using the system's default e-mail client.
- **E-mail Mask as JPEG** – E-mails the current view in the **Mask** as a JPEG image.
- **E-mail Mask as PNG** – E-mails the current view in the **Mask** as a PNG image.
- **E-mail Frame as JPEG** – Emails the current frame of the selected layer in a **.jpg** format using the system's default e-mail client.
- **E-mail Frame as PNG** – Emails the current frame of the selected layer in a **.png** format using the system's default e-mail client.
- **Exit** – Exits **Pdplayer**.

IX.2. Edit Menu

Figure 54 shows the Edit menu. It holds the basic command for working with layers.

Undo Brush Stroke	Ctrl+Z
Copy Layer and Frame	Ctrl+C
Copy Color Corrections	
Copy Layer as Nuke Script	
Copy Mask as Image	Ctrl+Shift+C
Copy Screen as Image	Ctrl+Alt+C
Paste	Ctrl+V
Paste as Single Frame	Ctrl+Shift+V
Paste as Embedded Image	Ctrl+Alt+V
Select Previous Layer	Shift+Page Up
Select Next Layer	Shift+Page Down
Select First Layer	Shift+Home
Select Last Layer	Shift+End
Select All Layers	Ctrl+A
Clear Selection	Escape
Select Group	
Assign New Group to Selection	Ctrl+G
New Adjustment Layer	
New Brush Layer	
New Brush Sequence Layer	
New Text Layer	Ctrl+T
New Video Layer	▶
Clear Canvas	
Set Work Area Begin at Current	Alt+Home
Set Work Area End at Current	Alt+End
Set Work Area to Selection	Shift+A
Resize Timeline to Fit All Layers	
Trim Timeline to Work Area	
Update All Layers	F5
Clear Cache	
Enable Automatic Preload	
Preload All Layers	
Stop Preload	Shift+Escape

Figure 54. The Edit menu

- **Undo** – Undoes the last command.
- **Copy Layer and Frame** – copies the current frame and layer into the clipboard(in .pdpcmp file format). It can later be pasted either as a **Sequence Layer** or a **Still Image Layer** in any **Pdplayer** window.
- **Copy Color Corrections** – Copies the color corrections of the selected layer. These can be than pasted to another layer.
- **Copy Layer as Nuke Script** - Copies a Nuke script that describes the current layer. The clipboard can now be pasted into Nuke as a graph that reproduces the current layer when rendered.
- **Copy Mask as Image** – Copies a screenshot of the **Mask** area to the clipboard.
- **Copy Screen as Image** – Copies a screenshot of the entire **Pdplayer** interface to the clipboard.
- **Paste** – when there is a file in the clipboard it will be added as a new layer. If this file is a part of a sequence – the whole sequence will be added.
- **Paste as Single Frame** – when there is a file in the clipboard it will be added as a **Single Frame Layer** even if it is a part of a sequence.
- **Paste as Embedded Image** – Pastes the content of the clipboard as a new **Embedded Image Layer**.
- **Select Previous Layer** – Selects the layer on top of the current layer.
- **Select Next Layer** – Selects the layer under the current layer.
- **Select First Layer** – Selects the top layer in the layer stack.
- **Select Last Layer** – Selects the bottom layer in the layer stack.
- **Select All Layers** – Selects all layers in the layer stack.
- **Clear Selection** – Deselects the layer.
- **Select Group** – selects all the layers in the same group as the currently selected layer
- **Assign New Group to Selection** – creates a new group from all selected layers
- **New Adjustment Layer** – Creates a new Adjustment Layer in the Timeline.
- **New Brush Layer** – Creates a new Brush Layer in the Timeline.
- **New Brush Sequence Layer** – Creates a new Brush Sequence Layer in the Timeline.
- **New Text Layer** – creates a new Text Layer in the Time Line.
- **New Video Layer** – creates a new Video Layer in the Time Line from the selected device.
- **Clear Canvas** – Clears the canvas for the current Brush Layer or for the current frame of the selected Brush Sequence Layer.
- **Set Work Area Begin at Current** – Sets the beginning of the work area at the current time slider position.
- **Set Work Area End at Current** – Sets the end of the work area at the current time slider position.
- **Set Work Area to Selection** – Sets the work area to the in/out points of the selected layer.
- **Resize Time Line to Fit All Layers** – resizes the time line so that the beginning is at first frame of the first layer and the end is at the last frame of the last layer.

- **Trim Time Line to Work Area** – trims the Time Line to the current size of the Work Area.
- **Update All Layers** – updates all layers with modified frames.
- **Clear Cache** – Clears the cache for all layers.
- **Enable Automatic Preload** – if this option is selected when you open a sequence in **Pdplayer** it will be loaded automatically without having to press the play button.
- **Preload All Layers** – preloads all layers into the cache.
- **Stop Preload** – stops the preloading.

IX.3. View Menu

Figure 55 shows the View Menu. It holds the commands for handling Pdplayer's interface and the way it displays the different layers.

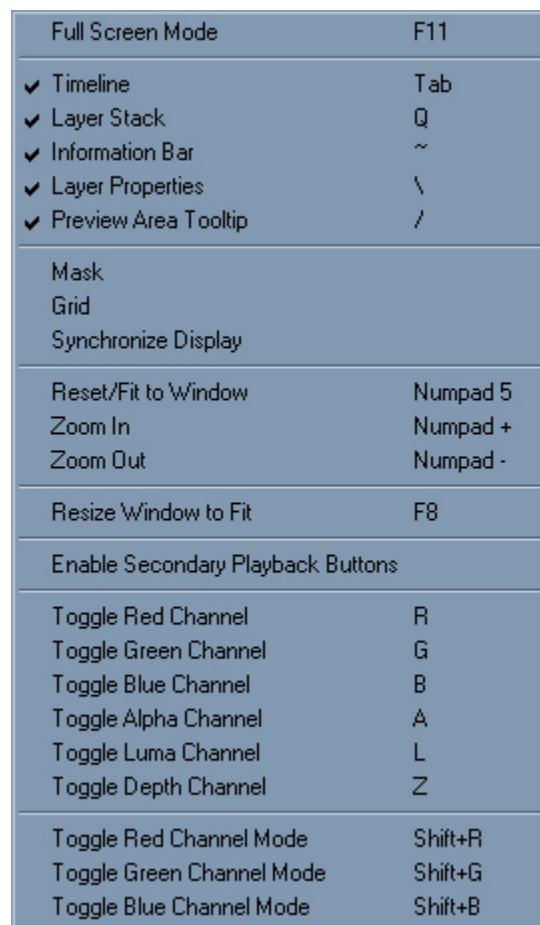


Figure 55. The View Menu

- **Full Screen Mode** – Toggles the full screen mode.
- **Timeline** – Shows/Hides the timeline area user interface.
- **Layer Stack** – shows and hides the layer stack.
- **Information Bar** – Shows/Hides the information bar.
- **Layer Properties** – Shows/Hides the layer properties panel.
- **Preview Area Tooltip** – when this option is selected holding the mouse pointer over a pixel will bring out a tooltip containing information about that pixel.
- **Mask** – Shows/Hides the resolution mask in the preview area.
- **Grid** – Shows/Hides the workspace grid.
- **Synchronize display** – Toggles the vertical synchronization. Prevents tearing but will have a performance hit.
- **Reset/Fit to Window** – Resets the workspace pan to the default 0, 0 position and the zoom to 100% / Fits all visible layers to the preview area performing pan and zoom at the same time.

- **Zoom In** – Zooms in the workspace in steps (10%, 20%, 30%, 50%, 100%, 200%, 400%).
- **Zoom Out** – Zooms out the workspace in steps (10%, 20%, 30%, 50%, 100%, 200%, 400%).
- **Resize Window to Fit** – Resizes the **Pdplayer** window to fit all viewable layers.
- **Enable secondary playback buttons** – When this option is enabled and if you are working with the Timeline hidden you will be able to use the secondary playback buttons by moving your mouse pointer to the bottom part of the screen.
- **Toggle Red Channel** – Toggles the visibility of the composition's red channel in grayscale.
- **Toggle Green Channel** – Toggles the visibility of the composition's green channel in grayscale.
- **Toggle Blue Channel** – Toggles the visibility of the composition's blue channel in grayscale.
- **Toggle Alpha Channel** – Toggles the visibility of the composition's alpha channel in grayscale.
- **Toggle Luma Channel** – Toggles the visibility of the composition's luma channel in grayscale.
- **Toggle Depth Channel** – Toggles the visibility of the composition's depth channel in grayscale.
- **Toggle Red Channel Mode** – Toggles the visibility of the composition's red channel in color.
- **Toggle Green Channel Mode** – Toggles the visibility of the composition's green channel in color.
- **Toggle Blue Channel Mode** – Toggles the visibility of the composition's blue channel in color.

IX.4. Play Menu

Figure 56 shows the Play Menu. It holds commands for controlling the playback in **Pdplayer**.

Play Forward	Up Arrow
Play Backward	Down Arrow
Pause	Enter
Reverse Playback Direction	
Next Frame	Right Arrow
Previous Frame	Left Arrow
Go to First Frame	Home
Go to Last Frame	End
Toggle Repeat Mode	
Increase Playback Rate	Numpad *
Decrease Playback Rate	Numpad /

Figure 56. The Play menu

- **Play Forward** – Plays the work area forward.
- **Play Backward** – Plays the work area backwards.
- **Pause** – Start/Stop playback.
- **Reverse Playback Direction** – Reverses the direction of the playback.
- **Next Frame** – Moves the time slider to the composition's next frame.
- **Previous Frame** – Moves the time slider to the composition's previous frame.
- **Go to First Frame** – Moves the time slider to the first frame of the work area.
- **Go to Last Frame** – Moves the time slider to the last frame of the work area.
- **Toggle Repeat Mode** – Toggles between repeat, ping pong and play once mode.
- **Increase Playback Rate** – Increases the playback rate with 1 FPS.
- **Decrease Playback Rate** – Decreases the playback rate with 1 FPS.

IX.5. Layer Menu

Figure 57 shows the Layer Menu. It holds the advanced commands for working with layers.

Go to Begin	
Go to End	
Go to In Point	
Go to Out Point	0
Align Begin at Current	
Align End at Current	
Align In Point at Current	[
Align Out Point at Current]
Position after Next Layer	
Set In Point at Current	Shift+I
Set Out Point at Current	Shift+O
Move Up	Alt+Up
Move Down	Alt+Down
Shift One Frame to the Left	Alt+Left
Shift One Frame to the Right	Alt+Right
Duplicate	Shift+D
Duplicate and Split	Ctrl+Shift+D
Expand into Layers	
Add Other Stereo View	
Resize to Timeline	
Resize to Work Area	
Update Frame	U
Update Modified Frames	Shift+U
Automatic Update	Ctrl+Shift+U
Rescan for New Frames	
Watch for New Frames	
Preload into Cache	Shift+Space
Remove from Cache	
Disable Caching	
Embed Layer	
Replace with...	
Replace with Previous Image	F3
Replace with Next Image	F4
Locate in Explorer	Ctrl+Shift+L
Open with...	Ctrl+Shift+W
Reset Position	Ctrl+Numpad 5
Half Width Left	Ctrl+Shift+Left
Half Width Right	Ctrl+Shift+Right
Half Height Up	Ctrl+Shift+Up
Half Height Down	Ctrl+Shift+Down
Nudge Left	Shift+Left
Nudge Right	Shift+Right
Nudge Up	Shift+Up
Nudge Down	Shift+Down
Delete Selected	Ctrl+Delete

Figure 57. The Layer Menu

- **Go to Begin** – Moves the time slider to the beginning of the selected layer.
- **Go to End** – Moves the time slider to the end of the selected layer.
- **Go to In Point** – Moves the time slider to the **In point** of the selected layer.
- **Go to Out Point** – Moves the time slider to the **Out point** of the selected layer.
- **Align Begin at Current** – Moves the selected layer in the timeline so that the beginning of the layer matches the current time.
- **Align End at Current** – Moves the selected layer in the timeline so that the end of the layer matches the current time.
- **Align In at Current** – Moves the selected layer in the timeline so that the **In point** of the layer matches the current time.
- **Align Out at Current** – Moves the selected layer in the timeline so that the **Out point** of the layer matches the current time.
- **Position after next Layer** – Positions the first frame of the selected layer after the last frame of the layer below it in the **Layer Stack**.
- **Set In Point at Current** – Sets the **In point** of the selected layer at the current time.
- **Set Out Point at Current** – Sets the **Out point** of the selected layer at the current time.
- **Move Up** – Moves the selected layer one position up in the layer stack.
- **Move Down** – Moves selected layer one position down in the layer stack.
- **Shift One Frame to the Left** – Moves the selected layer one frame to the left in the timeline.
- **Shift One Frame to the Right** – Moves the selected layer one frame to the right in the timeline.
- **Duplicate** – Duplicates the selected layer. The new layer will become selected and will appear over the original layer.
- **Duplicate and Split** – Duplicates the selected layer and sets the **Out point** one frame before current time. The new layer will become selected and the **In point** will be set at current time.
- **Expand into Layers** – this option is available only for .vrimg and .exr sequences which have additional layers inside. When executed this command creates additional layers in the composition each of which is displaying one of the layers in the .vrimg or .exr sequence.
- **Add Other Stereo View** – adds the other stereo view of a stereo sequence. **Pdplayer** recognizes certain key words in the path and file name of the loaded sequences in order to find and load the other part of the stereo sequence. The following words are recognized:
 - "left", "Left", "LEFT", "L", "lf", "LF" identify the left view
 - "right", "Right", "RIGHT", "R", "rt", "RT" identify the right view
- **Resize to Timeline** – resizes the current **Still image Layer** or **Embedded Image Layer** to the length of the **Timeline**.
- **Resize to Work Area** – resizes the current **Still image Layer** or **Embedded Image Layer** to the length of the **Work Area**.
- **Update Frame** – Forces **Pdplayer** to reload the current frame. Does not work on movie files.
- **Update Modified Frames from Cache** – Checks which frames have been updated on the disk since the last caching and removes them from the cache, so they can be reloaded on the next playback.

- **Automatic Update** – When this option is on **Pdplayer** will continuously scan for updated frames and reload them in the cache when needed.
- **Rescan Sequence for New Frames** – Checks the sequence for new frames and if there are any loads them in the cache.
- **Watch Sequence for New Frames** – watches the sequence for new frames and automatically adds them to the layer.
- **Preload into Cache** – loads the sequence into the cache without playing it.
- **Remove Layer from Cache** – Removes the layer from the cache so in the next play back it will be reloaded from the hard drive.
- **Disable Caching** – Disables caching of the layer and forces direct playback from disk.
- **Embed Layer** – embeds a **Still Image Layer** or an **Audio Layer** (containing a .WAV file) in the composition so that it can be saved in the in the .pdpcomp file.
- **Replace With...** – Opens the standard Open File dialog so a new file which will replace the current can be selected All settings of the layer will be preserved. In case you have multiple layers selected you will have to specify the root folder in which the sequences are placed.
- **Replace with Previous Image** – Replaces the current still image layer with the previous image in the directory.
- **Replace with Next Image** – Replaces the current still image layer with the next image in the directory.
- **Locate in Explorer** – Opens the original location of the layer in Windows Explorer.
- **Open With...** – Opens the standard Windows List with programs so you can choose in which program to open the selected layer from within **Pdplayer**.
- **Reset Position** – Resets the selected layer's position to 0, 0 in the preview area.
- **Half Width Left** – Moves the selected layer half of its resolution width to the left in the work space.
- **Half Width Right** – Moves the selected layer half of its resolution width to the right in the work space.
- **Half Height Up** – Moves the selected layer half of its resolution height upwards in the work space.
- **Half Height Down** – Moves the selected layer half of its resolution height downwards in the work space.
- **Nudge Left** – Moves the selected layer one pixel to the left in the preview area.
- **Nudge Right** – Moves the selected layer one pixel to the right in the preview area.
- **Nudge Up** – Moves the selected layer one pixel upwards in the preview area.
- **Nudge Down** – Moves the selected layer one pixel downwards in the preview area.
- **Delete** – Deletes the selected layer from the composition.

X. Shortcut Keys

X.1. Default Shortcut Keys

Pdplayer has shortcut keys for almost any command you will ever use. The following table lists the default keys and their function.

Shortcut Key	Command
Ctrl + N	New composition
Ctrl + Delete	Delete selected layer
Ctrl + A	Select all layers
Shift + Page Up	Move selected layer up in the layer stack
Shift + Page Down	Move selected layer down in the layer stack
Shift + Home	Move selected layer to the top of the layer stack
Shift + End	Move selected layer to the bottom of the layer stack
Esc	Deselect layer
Left	Go to previous frame
Right	Go to next Frame
Home	Go to first frame
End	Go to last frame
Space	Pause
Enter	Pause
,	Play backward
Up	Play forward
Numpad *	Increase fps
Numpad /	Decrease fps
C	Disable/enable layer color corrections
Shift + C	Disable/enable layer color corrections
V	Toggle layer visibility
Shift + V	Toggle layer visibility
Q	Show/Hide layer stack
D	Toggle the blend mode of the selected layer between Normal and Difference
Alt + Home	Set the Work Area beginning at current frame
Alt + End	Set the Work Area end at current frame
I	Go to the selected layer's In Point
O	Go to the selected layer's Out Point

Shortcut Key	Command
Shift + I	Place In point at current frame
Shift + O	Place Out point at current frame
B	Show blue channel in grayscale
G	Show green channel in grayscale
R	Show red channel in grayscale
A	Show alpha channel
L	Show luma channel
Z	Show depth channel
Shift + B	Show blue channel in color
Shift + G	Show green channel in color
Shift + R	Show red channel in color
[Align layer's In Point at current frame
]	Align layer's Out Point at current frame
Alt + [Place In point at current frame
Alt +]	Place Out point at current frame
Alt + Left	Move selected layer to the left in the time line
Alt + Right	Move selected layer to the right in the time line
Alt + Up	Move selected layer up in the layer stack
Alt + Down	Move selected layer down in the layer stack
Numpad 5	Toggle zoom factor between 100% and Fit Window
Ctrl + Numpad 5	Reset layer position
Numpad +	Increase zoom factor
Numpad -	Decrease zoom factor
Ctrl + Numpad +	Increase zoom factor
Ctrl + Numpad -	Decrease zoom factor
Shift + Left	Move selected layer to the left in the work space
Shift + Right	Move selected layer to the right in the work space
Shift + Up	Move selected layer upwards in the work space
Shift + Down	Move selected layer downwards in the work space
Shift + A	Sets the work area to match the selected layer
Ctrl + Shift + H	Start the built-in http server
F5	Update all layers
F11	Toggle full screen
F12	Toggle full screen

Shortcut Key	Command
Tab	Show/hide the time line
Ctrl+ Shift+ Left	Move selected layer half its width to the left
Ctrl+ Shift+ Right	Move selected layer half its width to the right
Ctrl+ Shift+ Up	Move selected layer half its height upwards
Ctrl+ Shift+ Down	Move selected layer half its height downwards
Shift + D	Duplicate layer
Ctrl + Shift + D	Duplicate and split layer
\	Show/hide the property panel
Ctrl + M	e-mail screen as JPEG
Ctrl + Shift + M	e-mail frame as JPEG
Ctrl + V	Paste the contents of the clipboard as a new layer
Ctrl + Shift + V	Paste the contents of the clipboard as a new Still Image Layer
Ctrl + Alt + V	Paste the image on the clipboard as a new Embedded layer, ignoring other formats
Ctrl + C	Copy the current frame of the selected layer to the clipboard
Ctrl + Shift +C	Copy an image of the mask contents to the clipboard
Ctrl + Alt + C	Copy an image of the window contents to the clipboard
F8	Resize window to fit Work space
~	Show/hide information bar
Ctrl + L	Add layer
U	Update frame
Shift + U	Update modified frame
Ctrl + Shift + U	Toggle automatic update
F3	Previous image of a sequence in a still image layer
F4	Next image of a sequence in a still image layer
Ctrl + O	Open Composition
Ctrl + S	Save Composition
Ctrl + Shift + S	Save Composition As...
Ctrl + T	Create new text layer
M	Flip layer horizontally
Shift + M	Flip layer vertically
Ctrl + Z	Undo
Ctrl + Shift + Z	Undo
K	Crop layer
Shift + K	Crop layer

Shortcut Key	Command
Shift + Space	Preload layer to cache
Shift + Esc	Stop preload
/	Toggle Preview Area tooltip
Shift + Alt + Left	Set the target view for the layer to Left
Shift + Alt + Right	Set the target view for the layer to Right
Shift + Alt + Down	Set the target view for the layer to Left
Ctrl + Alt + Left	Display the left view
Ctrl + Alt + Right	Display the right view
Ctrl + Alt + Down	Display both views
Ctrl + Alt + Up	Switches the left and right view

X.2. Custom Shortcut Keys

In addition to the default shortcut keys you can define your own. The default shortcut keys are defined in a file named **pdplayer.keydefs.txt** that can be found in the /config folder of the installation directory. You can create your own set of shortcut keys by creating a file named **pdplayer.keydefs.txt** in the /users folder of the installation directory and add your shortcut keys using the commands listed in the Commands Reference (Section XI).

XI. Command Reference

Command	Description
System	
--attach	Attach to an existing Pdplayer and pass it the rest of the command line
--cmdfile=filename.txt	Execute the commands from filename.txt
--transient, --transient={0,1}	Start Pdplayer in transient mode, that is, do not save settings on exit
Global	
--back_color=black (dark_grey, green, blue, magenta, white, transparent)	Set background color
--safe_area=none (blue, orange)	Set safe area type
--mask_type=none (transparent, crop, crop_safe)	Set mask type
--mask_size=720,576	Set mask size
--grid=0 (1)	Turn grid on or off
--counter=frame (timecode)	Set counter type
--repeat_type=none (ping_pong, loop)	Set repeat type
--fps=29.97	Set fps
--timeline=140	Set the timeline length in frames
--wa_begin=10	Set work area start frame
--wa_end=120	Set work area end frame
--time=7	Set current time
--zoom=250	Set zoom (in percents)
--pan=0,0	Set pan position
--frame_base=0 (1)	Set frame base (whether frames start from 0 or from 1)
--ext_device= {decklink,firewire,vtoaster,bluefish}	Set external output type
--selected_layer=4	Select the specified track/layer
--pp_visible={0,1}	Set whether the property panel is visible
--pp_position=0.02,0.98	Set the position of the property panel in 0.0-1.0 coordinates
--infobar_visible={0,1}	Set infobar visibility
--window_size=1280,720	Set window size
--http_port=80	Set HTTP server port

Command	Description
--always_on_top={0,1}	Set the always on top property for the window
--brush_size=10 --brush_softness=25 --brush_spacing=5 --brush_color=255,255,255 --brush_opacity=100	Set brush size, softness, spacing, color, or opacity.
--global_aspect=1.067	Set global pixel aspect
--timeline_visible={0,1}	Set whether the timeline is visible
--pv_tooltip_enabled={0,1}	Enables/disables the preview area tooltip
--spb_enabled={0,1}	Enables/disables the secondary playback buttons
--automatic_preload={0,1}	Enables or disables the automatic preload
--always_on_top={0,1}	Enables or disables the always on top mode
--apply_transforms_to_mask={0,1}	Controls whether pan, zoom and global aspect are applied to the mask
--stereo_view={left,right,both stereo}	Displays the left view, the right view, or a stereo view
--stereo_mode={anaglyph,anaglyph_gm,interlaced,checkerboard}	Sets the stereo mode to anaglyph or interlaced
--switch_stereo_views={0,1}	Sets the stereo mode to anaglyph, green/magenta anaglyph, interlaced, or checkerboard
Layer Properties	
--range=1-10,12,13,20-80/2 (first-last/step)	Select a range of frames from a sequence. Must immediately follow the file name. Example: pdplayer.exe d:\footage\sequence.####.tga --range=1-200/2
--still_image	Add a still image layer instead of autodetecting a sequence. Must immediately follow the file name.
--force_sequence	Add a sequence layer, even if the file doesn't exist or the sequence has a single frame. Must immediately follow the file name.
--begin=8	Set layer starting frame on the timeline
--length=25	Set layer length in frames
--in_point=4	Set layer in point
--out_point=84	Set layer out point
--name=foo	Set layer name
--position=0,0	Set layer position
--alpha={ignore,normal,pm,mask}	Set layer alpha mode
--blend={normal,add,multiply,screen,difference}	Set layer blend mode
--depth={ignore,replace,combine}	Set layer depth mode
--opacity=0..100	Set layer opacity
--invert_color=0,1	Invert layer color
--invert_alpha=0,1	Invert layer alpha

Command	Description
--invert_depth=0,1	Invert layer depth
--color_space={default,linear,srgb sRGB}	Set layer color space
--lookup_table=filename	Set layer lookup table
--lookup_table=default, --lookup_table=""	Reset layer lookup table to default
--exposure=2.4	Set layer exposure
--soft_clip=3.1	Set layer soft clip
--lift=0.14, --lift_r=-0.01	Set layer lift; --lift_r, --lift_g, --lift_b are per channel
--gamma=1.4, --gamma_r=1.8	Set layer gamma; --gamma_r, --gamma_g, --gamma_b are per channel
--gain=1.2, --gain_r=0.8	Set layer gain; --gain_r, --gain_g, --gain_b are per channel
--brightness=-0.1	Set layer brightness
--contrast=0.4	Set layer contrast
--hue=180	Set layer hue shift
--saturation=-8	Set layer saturation shift
--disable_cc=0,1	Disable color corrections
--auto_update=0,1	Set layer auto update mode
--disable_caching=0,1	Disable caching for this layer
--pixel_aspect=1.067	Set layer pixel aspect
--scale=150 --scale_x=150 --scale_y=150	Set layer scale
--flip_x={0,1} --flip_y={0,1}	Flip layer horizontally or vertically
--border=255,255,255 --border=none	Set layer border
--border={0,1}	Enable/disable layer border
--crop=X,Y,W,H --crop=none	Set layer crop rectangle
--text=0,0,"Lorem ipsum"	Set layer text to "Lorem ipsum".
--text_align_x={left,center,right}	Set horizontal text alignment.
--text_align_y={top,center/middle,bottom}	Set vertical text alignment.
--text_font="Times New Roman"	Set text font to "Times New Roman"
--text_size=18	Set text size to 18px.
--text_bold={0,1}	Set whether the text is bold.
--text_italic={0,1}	Set whether the text is italic
--text_color=R,G,B	Set text color
--text_outline_color=R,G,B; --text_outline_color=none	Set text outline color
--text_shadow_color=R,G,B; --text_shadow_color=none	Set text shadow color
--text_back_color=A,R,G,B; --text_back_color=none	Set text background color. A is the alpha and controls the opacity

Command	Description
--group_id=8	Set the layer group ID.
--fade_in=15 --fade_out=15	Set fade in or fade out portion, in frames
--primary_key=R,G,B,S,T --primary_key=none --secondary_key=R,G,B,S,T --secondary_key=none	Set primary or secondary color key to (R, G, B), slope S, tolerance T.
--image_layer="Diffuse"	Set the image layer by name
--image_layer=""	Reset the image layer to the default
--image_layer_index=5	Set the image layer by index
--target_view={left,right,both}	Set the target view
--layer_safe_area={0,1}	Enable/disable the per-layer safe area
--border_color=R,G,B	Set the layer border/safe area color (without enabling the border)
--layer_channels={r_grayscale,r_color,r_hidden, g_grayscale,g_color,g_hidden, b_grayscale,b_color,b_hidden,rgb,alpha,luma,depth}	Set the layer channels
Commands <p>Note: While the commands in this section can be used from the command line, their primary purpose is to be bound to keys using pdplayer.keydefs.txt (where they are not preceded by --.) The reverse is also true; while the options in the preceding two sections are intended to be used from the command line, they can too be bound to a hot key, again, not preceded by --.</p>	
--layer_delete_selected	Delete selected layer
--layer_delete_all	Delete all layers
--layer_select_up	Select previous layer
--layer_select_down	Select next layer
--layer_select_first	Select first layer
--layer_select_last	Select last layer
--layer_select_none	Select no layer
--layer_select_all	Select all layers
--layer_select_group	Selects all layers that share a group ID with the selected.
--layer_assign_group	Synthesize a unique group ID and assign it to the selected layers.
--layer_move_selected_up	Move selected layer up in Z-order
--layer_move_selected_down	Move selected layer down in Z-order
--play_forward	Start playing forward, or pause if already playing forward
--play_backward	Start playing backward, or pause if already playing backward
--toggle_pause	Pause or resume playing if already paused
--reverse_playback_direction	Reverse playback direction
--first_frame	Go to first work area frame

Command	Description
--next_frame	Advance one frame
--prev_frame	Go back one frame
--last_frame	Go to the last work area frame
--toggle_repeat	Toggle repeat mode
--increase_fps	Increase frames per second
--decrease_fps	Decrease frames per second
--workarea_set_begin	Set work area beginning at the current frame
--workarea_set_end	Set work area end at the current frame
--layer_go_to_begin	Go to layer start
--layer_go_to_end	Go to layer end
--layer_go_to_in	Go to layer in point
--layer_go_to_out	Go to layer out point
--layer_align_begin	Align layer start at current frame
--layer_align_end	Align layer end at current frame
--layer_align_in	Align layer in point at current frame
--layer_align_out	Align layer out point at current frame
--layer_shift_left	Shift layer left one frame
--layer_shift_right	Shift layer right one frame
--increase_zoom_factor	Increase zoom factor
--decrease_zoom_factor	Decrease zoom factor
--reset_zoom_factor	Reset zoom factor
--reset_pan_position	Reset pan position
--reset_pan_and_zoom	Reset pan and zoom, or zoom to fit window if already reset
--reset_layer_position	Reset the position of the selected layer to 0,0
--layer_move_left	Nudge the selected layer one pixel to the left
--layer_move_right	Nudge the selected layer one pixel to the right
--layer_move_up	Nudge the selected layer one pixel up
--layer_move_down	Nudge the selected layer one pixel down
--layer_set_in_at_current	Set the in point of the selected layer at the current frame
--layer_set_out_at_current	Set the out point of the selected layer at the current frame
--workarea_set_to_selection	Set the work area to the in/out points of the selected layer
--channel_b	Toggle green channel display between RGBA, grayscale, green, or hidden
--channel_g	Toggle blue channel display between RGBA, grayscale, blue, or hidden
--channel_r	Toggle red channel display between RGBA, grayscale, red, or hidden

Command	Description
--channel_a	Toggle alpha channel
--channel_l	Toggle luma
--channel_z	Toggle depth channel
--toggle_timeline	Toggle the timeline
--layer_half_width_left	Move selected layer half width to the left
--layer_half_width_right	Move selected layer half width to the right
--layer_half_height_up	Move selected layer half height up
--layer_half_height_down	Move selected layer half height down
--layer_duplicate	Duplicate current layer
--layer_duplicate_and_split	Duplicate current layer, splitting it at the current frame
--layer_remove_from_cache	Remove selected layer from cache
--layer_toggle_disablecache	Toggle caching for the selected layer
--layer_toggle_autoupdate	Toggle automatic update for the selected layer
--toggle_property_panel	Toggle the layer property panel
--toggle_mask	Toggle mask
--toggle_grid	Toggle grid
--toggle_vsync	Toggle display synchronization
-layer_rescan_sequence	Rescan the sequence of the selected layer, looking for new or removed frames
--toggle_infobar	Toggle the infobar
--http_start	Start HTTP server
--http_stop	Stop HTTP server
--http_toggle	Toggle HTTP server
--cache_clear	Clear all cache
--toggle_fullscreen	Toggle full screen mode
--mail_screen_as_jpeg	E-mail screenshot as JPEG
--mail_screen_as_png	E-mail screenshot as PNG
--mail_mask_as_jpeg	E-mail the contents of the current mask as JPEG
--mail_mask_as_png	E-mail the contents of the current mask as PNG
--mail_frame_as_jpeg	E-mail the current frame of the selected layer as JPEG
--mail_frame_as_png	E-mail the current frame of the selected layer as PNG
--clipboard_paste	Paste the contents of the clipboard as a new layer
--clipboard_paste_frame	Paste the contents of the clipboard as a new single frame layer
--clipboard_paste_image	Paste the image on the clipboard as a new layer, ignoring other formats
--clipboard_copy_layer	Copy the current frame of the selected layer to the clipboard

Command	Description
--clipboard_copy_mask	Copy an image of the mask contents to the clipboard
--clipboard_copy_screen	Copy an image of the window contents to the clipboard
--clipboard_copy_layer_as_nk	Copy the the selected layer to the clipboard as a Nuke script
--locate_in_explorer	Open Windows Explorer on the current frame of the selected layer
--open_with	Show the "Open With..." dialog for the current frame of the selected layer
--resize_window_to_fit	Resize the Pdplayer window to fit the visible layers
--add_layer	Open the Add Layer dialog
--save_screen_as	Open the Save Screen As dialog
--save_frame_as	Open the Save Frame As dialog
--save_frame_as=filename	Save the current frame as 'filename'
--exit	Exit Pdplayer
--layer_update_frame	Update current frame
--layer_update_modified	Remove modified frames from cache
--layer_replace_with_previous	Replace an image layer with the previous image in the directory
--layer_replace_with_next	Replace an image layer with the next image in the directory
--layer_replace_with	Open the Replace with... dialog and replace the current layer
--layer_replace_with=filename	Replace the current layer with 'filename'
--layer_replace_with_image=filename	Replace the current layer with 'filename', treating it as a still image
--layer_flip_x	Flip layer horizontally or vertically
--layer_flip_y	
--layer_toggle_visible	Toggle layer visibility
--layer_toggle_disable_cc	Disable/enable layer color corrections
--new_adjustment_layer	Adds a new adjustment layer (with the specified width, height, and length)
--new_adjustment_layer=W,H,L	
--new_brush_layer	Adds a new brush layer
--new_brush_layer=W,H,L	
--new_brush_sequence_layer	Adds a new brush sequence layer
--new_brush_sequence_layer=W,H,L	
--new_text_layer	Adds a new text layer
--new_text_layer=W,H,L	
--save_mask_as_image	Opens the "Save Mask as Image" dialog
--save_mask_as_image=filename	Saves the current mask as 'filename'
--save_mask_as_sequence	Opens the "Save Mask as Sequence" dialog
--save_mask_as_sequence= file.ext,codec,quality,target	Saves the current mask as a sequence or a movie. The parameters are optional. For AVI or Quicktime, the available values for 'codec' can be seen in the Save Mask As dialog. For TGA images, 'codec' can be 'none' or 'rle'. 'quality' can be a value between 1 and 100. 'target' can be windows (default) or mac.
--save_layer_as	Opens the "Save Layer as" dialog

Command	Description
--save_layer_as=file.ext,codec,quality,target	Saves the current layer as a sequence or a movie
--clear_canvas	Clear layer canvas
--layer_toggle_crop	Enable/disable layer crop rectangle
--layer_resize_to_timeline	Resizes a single-frame layer to cover the timeline
--layer_resize_to_workarea	Resizes a single-frame layer to cover the work area
--layer_preload_into_cache	Preload the selected layer into the cache
--toggle_automatic_preload	Toggles the automatic preload
--toggle_pv_tooltip	Toggles the preview area tooltip
--save_composition_as	Open the Save Composition As dialog
--save_composition_as=filename	Saves the current composition as 'filename'
--save_composition	Saves the current composition
--open_composition	Open the Open Composition dialog
--new_composition	Discards the current composition
--toggle_always_on_top	Toggles the always on top mode
--export_composition_as	Open the Export Composition As dialog
--cache_stop_preload	Stops preloading a layer
--add_recent_layer=K	Add the recent layer with index K (starting from 1) as if chosen from the Add Recent menu
--timeline_fit_all_layers	Resize timeline to fit all layers
--timeline_trim_to_workarea	Trim timeline to work area
--layer_position_after	Position the in point of the selected layer at the out point of the layer beneath
--toggle_layer_stack	Toggle layer stack
--update_all_layers	Update all layers as if by using --layer_update_frame and --layer_update_modified on each
--layer_toggle_difference	Toggle the blend mode of the selected layer between Normal and Difference
--embed_layer	Embed a still image or an audio layer into the composition
--preload_all_layers	Preload all layers into cache
--switch_stereo_views	Switch the left and right view
--expand_into_layers	Expand the current layer into its corresponding image layers
--layer_select_all	Select all layers
--add_other_stereo_view	Add the other stereo view

XII. Text Fields Reference

Starting with Pdplayer 1.0.4, the text in text layers may contain embedded fields of the form `{object:property}`. Such fields are replaced with their values before the text is displayed. To disable expansion of a specific field, double the `{` character; for example, to insert the literal text `{clock:date}`, use `{}{clock:date}`.

The field object (the part before the colon) can be "composition", "timeline", "clock", "mask", a single layer, or a layer set.

The composition object supports a single property:

<code>{composition:name}</code>	composition name such as "fields.pdpcomp"
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The timeline object supports the following properties:

<code>{timeline:frame}</code>	current frame
<code>{timeline:frame+2}</code>	current frame plus 2
<code>{timeline:frame-1}</code>	current frame minus 1
<code>{timeline:frame,4}</code>	current frame, padded with zeros to length 4
<code>{timeline:frame-1,4}</code>	current frame minus 1, padded to length 4
<code>{timeline:timecode}</code>	current frame, converted to timecode using the current frames per second
<code>{timeline:timecode+584}</code>	current frame plus 584, as timecode
<code>{timeline:timecode/30}</code>	current frame as timecode using 30 fps
<code>{timeline:timecode/29.97}</code>	current frame as drop frame NTSC timecode
<code>{timeline:timecode+85521/24}</code>	current frame +85521 using 24 fps

The clock object supports the following properties:

<code>{clock:date}</code>	current date (in local, short form)
<code>{clock:longdate}</code>	current date in local long form
<code>{clock:time}</code>	current time
<code>{clock:%Y-%m-%d}</code>	current date, in year-month-day form
<code>{clock:%d.%m.%Y}</code>	current date, in day.month.year form
<code>{clock:%H:%M:%S}</code>	current time, in 24hr hour:minute:second form

The mask object supports the following properties:

<code>{mask:width}</code>	current mask width
<code>{mask:height}</code>	current mask height

A layer can be identified by index or by name. A positive index identifies a layer starting from the top of the layer stack, and a negative number - from the bottom. So, for example, {1:name} refers to the name of the first layer, and {-1:name} refers to the name of the last layer (first from bottom). A layer can be identified by name by enclosing the name in single quotes, as in {#####.dpx:path}. The layer after '#####.dpx' can be identified with {'#####.dpx'+1:path}, and other offsets also work.

A layer supports the following properties:

{1:name}	layer name
{1:width}	layer width
{1:height}	layer height
{1:length}	layer length in frames
{1:timecode}	embedded timecode, from file header
{1:edgecode}	embedded edgecode, from file header
{1:keycode}	same as edgecode

The following three fields support offset and width as described for {timeline:frame}.

{1:frame}	layer frame, zero-based
{1:fnframe}	frame from file name
{1:emframe}	embedded frame, from file header

{1:path}	path to current frame
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The path property can be indexed to select a single path element or a sequence of elements:

{1:path[1]}	selects the first element of the path
{1:path[2]}	selects the second element of the path
{1:path[-1]}	selects the last element of the path (the file name)
{1:path[1..3]}	selects first three elements
{1:path[1..-2]}	selects from the first to the second to last (that is, everything but the file name)

Suppose that {1:path} is "D:\footage\000186_10\557568.dpx". Then,

{1:path[1]}	is "D:\\"
{1:path[2]}	is "footage\"
{1:path[3]}	is "000186_10\"
{1:path[4]}	is "557568.dpx"
{1:path[5]}	is ""

{1:path[-1]}	is "557568.dpx"
{1:path[-2]}	is "000186_10\"
{1:path[-3]}	is "footage\"
{1:path[-4]}	is "D:\"
{1:path[-5]}	is ""

{1:path[1..2]}	is "D:\footage\"
{1:path[-2..-1]}	is "000186_10\557568.dpx"

The layer properties can also be used with a set of layers. In this case, the field is replaced with the properties of the layers in the set, separated with new lines. So, for example, {1,2,3:name}, where the names of the first three layers are "Layer 1", "Layer 2" and "Layer 3", is replaced by:

Layer 1

Layer 2

Layer 3

A layer set can have the following forms:

- selection, -selection - Identifies the currently selected layers. -selection is the same, but in reverse order.

Example :

{selection:name}.

- group(K), -group(K) - Identifies the layers having group ID of K. -group is in reverse order.

Example :

{-group(4):timecode}.

- * layer..layer - Identifies several consecutive layers, where "layer" in the above represents a single layer identified by index or name, as in the previous section.

Examples :

{1..5:name},
{1..-1:name}, { 'Adjustment 1'+1..-1:name}.

- set,set,...,set -Combines several layer sets of the previous forms.

Examples :

{1..2,5,8..-1:name},
{group(1),group(2):path}.

- set!set - Takes the first set and discards all layers in the second. If the first set is not present, takes all layers as the first set. Examples: {!group(1):name} - the names of all layers that are not in group 1, {group(2)!1..5:name} - the names of all layers in group 2 that are not among the first five. An additional syntax, {set::property}, can be used to scan 'set' for the first layer for which the current time falls within the in:out points. 'property' is then taken from that layer. This is useful when several clips are arranged one after another. As an example, if the last three layers in the stack are such

sequentially arranged clips, {-3..-1::timecode} and {-1..-3::timecode} will both select the timecode of the current clip. The difference between the two is that the first will scan from top to bottom, and the second will scan in reverse order. This may be significant if the layers overlap.

The clock object supports a format string as property. In the string, the following format codes are replaced as described:

%a	Abbreviated weekday name
%A	Full weekday name
%b	Abbreviated month name
%B	Full month name
%c	Date and time representation appropriate for locale
%d	Day of month as decimal number (01 – 31)
%H	Hour in 24-hour format (00 – 23)
%I	Hour in 12-hour format (01 – 12)
%j	Day of year as decimal number (001 – 366)
%m	Month as decimal number (01 – 12)
%M	Minute as decimal number (00 – 59)
%p	Current locale's A.M./P.M. indicator for 12-hour clock
%S	Second as decimal number (00 – 59)
%U	Week of year as decimal number, with Sunday as first day of week (00 – 53)
%w	Weekday as decimal number (0 – 6; Sunday is 0)
%W	Week of year as decimal number, with Monday as first day of week (00 – 53)
%x	Date representation for current locale
%X	Time representation for current locale
%y	Year without century, as decimal number (00 – 99)
%Y	Year with century, as decimal number
%z, %Z	Either the time-zone name or time zone abbreviation, depending on registry settings; no characters if time zone is unknown
%%	Percent sign

The # flag may prefix any formatting code. In that case, the meaning of the format code is changed as follows.

%#a, %#A, %#b, %#B, %#p, %#X, %#z, %#Z, %#%	# flag is ignored.
%#c	Long date and time representation, appropriate for current locale. For example: "Tuesday, March 14, 1995, 12:41:29".
%#x	Long date representation, appropriate to current locale. For example: "Tuesday, March 14, 1995".
%#d, %#H, %#I, %#j, %#m, %#M, %#S, %#U, %#w, %#W, %#y, %#Y	Remove leading zeros (if any).

XIII. Known Limitations

This section lists the known limitations of **Pdplayer**.

XIII.1. Limitations common to 32 bit and 64 bit versions

- **Pdplayer** cannot create AVI files larger than 2 GB. The classic AVI format files cannot be larger than 2 GB in size. **Pdplayer** cannot yet create OpenDML format AVI files that do not have this limitation.
- When importing movies that contain audio, the sound will only be loaded if the total length of the movie clip is no longer than 30 minutes

XIII.2. Limitations of the 32 bit version

- **Pdplayer** (as a 32 bit application) cannot access more than 2 GB of memory on a 32 bit version of Windows, and more than 4 GB on a 64 bit version of Windows. In some situations (a machine with 4 GB running a 32 bit version of Windows) this can lead the free memory indicator to report more than 50%, whereas in fact this memory is not available for use by **Pdplayer**.

XIII.3. Limitations of the 64 bit version

A 64 bit application is not allowed to load or interoperate with 32 bit DLLs. As a consequence,

- **Pdplayer** cannot load or create Quicktime movies because Apple has not yet provided a 64 bit version of Quicktime for Windows.
- Most AVI codecs do not have a 64 bit version, which makes the support for AVI files extremely limited. Uncompressed AVI files do work, though, subject to the 2 GB limitation above.
- RTV files do not work, even if rtvlib2.dll is installed.
- Under Windows XP 64 bit, the e-mail features only work if the default mail client is 64 bit. Note that Outlook Express is 64 bit under Windows XP64, but Outlook is not, and does not work when invoked from a 64 bit application.