

Table of Contents

YafaRay	5
YafaRay4tS Setup Library	7
YafaRay Materials Library	7
Output – Render File.....	11
Setup.....	12
YafaRay Setup	12
YafaRay4tS Setup	12
YafaRay4tS Viewers.....	12
YafaRay4tS User Interface	14
YafaRay4tS Toolbar	14
Default Panel.....	17
Render Settings.....	17
Denoise Settings	17
Draw Parameter.....	17
Bucket Rendering.....	17
Render Pass.	18
Image Viewer	18
Scene Settings	18
YafaRay4tS Scene Utilities.....	19

Web Links open to the Archived YafaRay Website.

When this document is opened with a web browser the web links can be opened in a New Tab by using Ctrl Left Click or Middle Mouse Click.

Camera	20
Camera Settings	20
Perspective/Architect - View	20
Orthographic - View	20
Angular - View	21
Area Render	21
Scene Camera	21
Background.....	22
Background Settings	22
Constant Color	23
Gradient.....	23
Texture	23
Sun Sky	24
Darktide Sun Sky.....	25
Preview	26
SunSkyObject	26
YafaRayLightRig.....	27
ImageSphere.....	27
Volume Integrator.....	28
Volume Region	29
Volume Type	29
Animation	30
Animation Settings.....	30
Output – Render File.....	30
Sequence Player	30

Protect Workspace	31
Lighting Methods	32
Common Lighting Controls	32
Anti-Aliasing Settings	32
General Settings	32
Output – Render File	32
Lighting Methods Overview	33
Direct Lighting	35
Caustics.....	35
Ambient Occlusion	35
Photon Mapping	36
Diffuse Photons	36
Caustics Photons	36
Final Gather	36
Pathtracing	37
Caustics Options	37
Photon Options	37
Path Options	37
Bidirectional	38
SPPM Lighting	39
YafaRay4tS Lights	40

YafaRay4tS Materials	43
Common Material Settings	43
Per Material settings:	43
Wireframe	43
YafaRay Shiny Diffuse	44
YafaRay Glossy	45
YafaRay Coated Glossy	46
YafaRay Glass	47
YafaRay Rough Glass	48
YafaRay Blend	49
YafaRay Light Material	50
YafaRay Portal Material	50
Texture Mapping	51
YafaRay4tS Procedurals	52
Render to File	54
Render Passes	55
Beta Releases	58

YafaRay



[Visit the YafaRay website](#)

[YafaRay User Guide Map](#)

[YafaRay Crash Course](#)

Note that all links to the original YafaRay manual go to the Internet Archive which causes internal page links to move down the page. Scroll up a little bit to see the actual link point in the page.

YafaRay4tS



YafaRay is a free open source Monte Carlo raytracing engine produced by the YafaRay Team. Raytracing is a rendering technique for generating realistic images by tracing the path of light through a 3D scene. YafaRay4tS is an open source scripting project created by members of the trueSpace community to add functionality to trueSpace7.61 for exporting YafaRay formatted XML files for reading by the YafaRay render engine. Please note that YafaRay4tS is provided without warranty or guarantee of fitness for any purpose. It is provided "as is" and any use of this software is done at your own risk.

YafaRay4tS - Features Overview

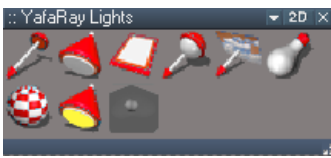


YafaRay4tS is implemented as an XML exporter that uses batch scripting to interface with YafaRay command line XML interface.

The YafaRay4tS user interface exposes the YafaRay render settings for you, so that you can have full control over the output produced. Included in the YafaRay4tS distribution are several features to make using YafaRay with trueSpace easier. This ranges from several optional Viewers to see your rendered results, to the YafaRay specific Light objects and YafaRay specific Direct3D materials for use inside trueSpace. Care was taken in designing the scene export to allow it to support as many of the built in trueSpace geometry types as possible, ranging from Sub-division surfaces to Morph objects. While vertex normals are not supported by YafaRay, YafaRay4tS does allow for an auto-smoothing angle to be set on a per object basis.

YafaRay4tS - Panels

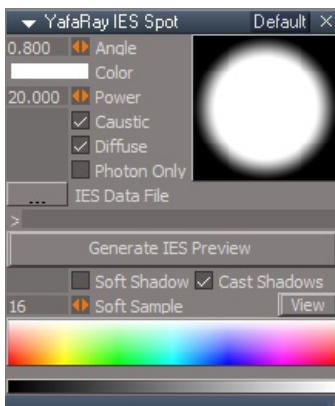
While an icon interface is included with YafaRay4tS for convenience, most of the render settings work is done in the YafaRay4tS user interface panels. The YafaRay4tS project has focused on implementing as much of the full YafaRay features set as is possible from within trueSpace. As can be seen, YafaRay4tS is well on the way to complete YafaRay support! Much thought has gone into placing the YafaRay features and settings into logical groupings of panel elements to make the interface easier to use without sacrificing the full customizability and power of the YafaRay render engine

YafaRay Lights

YafaRay lights differ from trueSpace's built-in light objects so a set of lights has been created for YafaRay4tS to make it easy and intuitive to set up lights from within the trueSpace scene editing environment. The custom YafaRay specific light objects are available via a light library that is installed into the trueSpace main libraries when YafaRay4tS is installed.



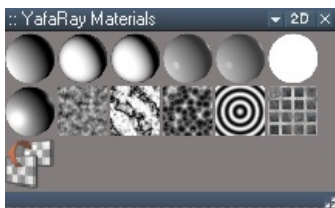
Also an icon fly out for easy access to the custom light objects has been added to the YafaRay4tS toolbar next to the YafaRay Render and Settings icons fly out. All of the YafaRay light types are represented from within trueSpace. Each of the light objects has settings panels that will show up in the trueSpace's stack view panel tab, exposing the YafaRay specific light settings for easy editing.



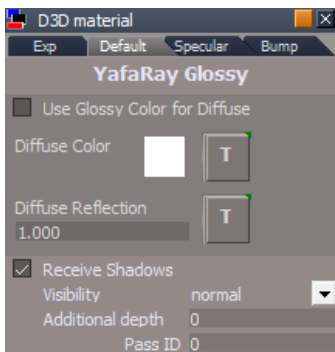
While it is impossible to accurately represent YafaRay photo realistic lighting from within trueSpace's real time viewport, care was taken to get as close an approximation as was practical. For example the YafaRay4tS light objects include built-in scripting so that adjusting the YafaRay parameters for power and size will cause the amount of light generated in the real time display to be updated as the values are changed. Also each light includes a convenient color picker for the light's color and a Color aspect for advanced color options.

YafaRay4tS Setup Library

YafaRay4tS.RsScn with YafaRay Light setup and a Yafaray Camera. YafaRay4tS toolbar.RsObj script that reloads the toolbar. YafarayVolume.RsObj Volume Region object for Uniform and Height Fog. Yafaray Camera.RsObj includes a script to select DOF distance and additional settings. EntryPoint.RsObj A Yafaray EntryPoint Camera. When the scene loads the view will switch to this Camera's view. In the YafaRay4tS/ Camera aspect, with this camera selected, select the Set Camera button. when rendering from a Camera View. Several objects that are used to create a D3D Preview of the Background. Tiff Loader.RsObj for loading and displaying Tiff images in trueSpace.

YafaRay Materials Library

Included with YafaRay4tS are custom trueSpace Direct3D materials. These materials mirror the YafaRay materialsShiny Diffuse, Glossy, Coated Glossy, Glass, Rough Glass, Blend, Texture Map in with which you can add an Image, Procedural Clouds, Marble, Wood, Voronoi, plus one special Light Material used to indicate that an object is to be used as an object light. Also included is a Blend Material Collection (3D Object) used with the YafaRay Blend material for blending two materials together.



By using Direct3D materials the user is able to get rudimentary feedback within the trueSpace real time display as to how the materials will look when rendered. It also allows for the user to use the built-in trueSpace tools for applying and inspecting the material. The YafaRay material settings have been added to the material panel so that they can be easily edited when viewing the material in trueSpace's Material Editor. Unfortunately because of the limitations of DirectX9 reflections and refraction cannot be simulated in the real time viewport. Instead, specular faking and specular mapping are implemented in the DirectX materials to help give the impression of reflective surfaces.

YafaRay4tS

YafaRay4tS was created to work in trueSpace7.61 'Workspace'
Tested with the YafaRay v3.3.0 render engine

trueSpace 7.61 Unofficial Updates

YafaRay4tSv0.9.9 is fully incorporated into trueSpace7.61 and trueSpace7.61Std unofficial updates
No installation is necessary if you apply these updates:
trueSpace7.61 Full Version
trueSpace 7.61 Standalone

YafaRay Installation

1.) Download the YafaRay v3.3.0 or greater render engine from one of these sites:

Yafaray 3.3.0 and up for Blender 2.79, 3.5.1 last tested version <https://github.com/YafaRay/Blender-Exporter/releases>

Yafaray Core 3.3.0 and up, 3.5.1 last tested version <https://github.com/YafaRay/Core/releases>:

YafaRay Standalone YafaRay for Blender

Unzip the file and copy the 'yafaray_v3' folder:
Examples:

```
C:\Program Files\yafaray_v3
C:\trueSpace761\tS\yafaray_v3
C:\trueSpace761Std\yafaray_v3
C:\Programs\yafaray_v3
```

* For Blender users look at the Blender instructions below.

YafaRay4tS Installation

Prerequisites:

Clinton3dPlugin.rxs
C3DPersistent v3 - C3D Persistence Autoload.RsOb
HDRI to Lights
Compositing library

<http://clintons3d.com/plugins/truespace/rendering/yafaray.html>

Optional

Clintons3dPluginExt.rsx - Tif image loader and 32bit png saver for trueSpace7.61
OptDetector.dll - for better render display
Workspace Protection - to prevent modelspace from changing workspace objects

- iOpt Detectors

The OptDetector.dll must be Installed and Loaded from the Workspace's Package Manager.

Note: If you want to use OptDetector for several installed versions of trueSpace7.61 you only need to install one OptDetector plugin, which can be shared.

Example: Install to your C: / drive. Then copy the 3 OptDetectors libraries to your trueSpace Rs Main Libraries folder.

Warning: After you Reset to Default Context from Workspace the OptDetector's plugin will require that the 3 OptDetectors libraries load again.

Next if you have previously installed a very old version of YafaRay4tS, Uninstall YafaRay4tS from the Add & Remove program in the Windows Control Panel first!

2.) Install and Load the Clinton3dPlugin.rxs and Clintons3dPluginExt.rsx plugins from Workspace's Package Manager and restart trueSpace 7.61

3.) Install the C3DPersistent v3

4.) [Extract All] of the files from the YafaRay4tS zip file

5.) Open trueSpace7.61 and from the Workspace's File menu, Load the YafaRay4tS_Installer.RsObj from where you extracted the files.

Do not Drag and Drop into trueSpace, only use Workspace's File menu!

6.) From the YafaRay4tS Installer panel select the [Install] button.

You should see a Question message asking:

"Your existing YafaRay4tS Libraries will be replaced with updated versions."

"Would you like to continue?"

If not select your keyboard keys Alt + Tab to bring the message forward. Selecting [Yes] will start the installation and selecting [No] will cancel the installation.

7.) From Workspace in the Stack/Panel - YafaRay4tS/Setup aspect

Set the 'YafaRay Installation Path' to the yafaray-xml.exe file where you have installed YafaRay v3.3.0

Examples:

[YafaRay Standalone](#)

C:\Program Files\yafaray_v3\bin\yafaray-xml.exe

C:\trueSpace761\ts\yafaray_v3\yafaray-xml.exe

C:\trueSpace761Std\yafaray_v3\yafaray-xml.exe

Blender

C:\Program Files\Blender Foundation\Blender\2.79\scripts\addons\yafaray_v3\bin\yafaray-xml.exe

BforArtists

C:\Program Files\Bforartists 1.0.0\2.79\scripts\addons\yafaray_v3\bin\yafaray-xml.exe

YafaRay4tS/ Setup - YafaRay Installation Path

Installation Defaults:

If copied to the above examples, the 'YafaRay Installation Path' will be set automatically.

If copied to the trueSpace folder, any folder with 'yafaray' in the name will be found so it's not limited to 'yafaray_v3' specifically.

Note: If you want to use YafaRay4tS for several installed versions of trueSpace7.61 you only need one 'YafaRay Installation Path' that can be shared. Install to C:\Program Files [Recommended]

8.) Set the 'Output - Render File' to where you want to render an image or images.

Examples:

C:\trueSpace761\ts\Image Folder\yaf_test.png

C:\trueSpace761Std\Image Folder\yaf_test.png

C:\Temp\yaf_test.png

9.) Select the [Save Settings] button to save your directories into the default YafaRay4tS object.

10.) Position the YafaRay4tS toolbar and save your Layout.

Congratulations you've finished your YafaRay4tS setup!

* For Vray users look at the Vray instructions below.

YafaRay4tS Uninstall

There is no uninstaller

Developer notes:

After a 'Reset to Default Context'

Right click any of the Offline Render icons to load the YafaRay4tS panel

* For Vray users look at the Vray instructions at the bottom.

The **YafaRay4tS Scene Utilities** in the YafaRay4tS toolbar can be used to update an existing scene.

Vray:

If you have Vray Installed and Loaded and you want to switch to YafaRay4tS as the Renderer

- 1.) In the 'Offline renderers' panel select Yafaray as the Renderer
- 2.) Right click any of the Offline Render icons to load the YafaRay4tS panel

Blender:

- 1.) To install for Blender copy the "yafaray" folder into the AddOns folder inside Blender
- 2.) Start Blender
- 3.) File > User Preferences
- 4.) Add-ons
- 5.) Find and activate yafaray via the checkbox
- 6.) Select the Save User Settings button

Note: The YafaRay site says YafaRay is no longer compatible with Windows XP, but it does work in trueSpace 7.61

They must be referring to running with Blender on Windows XP.

Output – Render File

The Output Render File section can be found on many if not most of the YafaRay4tS panels.

View - If enabled YafaRay will render the Workspace main view.

Camera - If enabled YafaRay will render the set Camera view.

Width - The width of the image rendered.

Height - The height of the image rendered.

> File name for rendered image output. This is where the rendered results will be saved.

Save Sequence - render repeated images, saving them to a new file name based on a count each time without the need to manually type in a new name.

Open Output Folder - Opens the folder entered into the above path.

Render - Exports XML file and spawns the YafaRay renderer.

File Formats - PNG is the default file format. Additional file formats are EXR, HDR, JPEG, and TIF

External Viewer - open the last rendered image or animation sequence in the external viewer.

Cancel - cancel the render

Press CTRL+C with the console focused to interrupt a render in progress

Setup

YafaRay Setup

YafaRay Installation Path - Path to yafaray-xml.exe file.

Use the File browse dialog button.

Use Custom Temporary Directory - Path to the Custom Directory.

Directory for storing generated XML file and temporary YafaRay output image. Default working directory is the same as the output image directory. Use this option if you want to use a different directory from the final image output directory.

Use Custom XML Export file - Use the File browse dialog button for selecting custom XML file export location.

Use a custom filename and directory for the generated XML file. This is useful when generating multiple XML files for batch rendering.

Export XML - Creates an XML file without rendering.

If "Delete XML file after render" is checked, you will have to use the Export XML before using the Render XML for each render.

Render XML - Renders the Custom XML Export file.

Delete XML file after render - Deletes the generated XML file on render completion.

YafaRay4tS Setup

Leave console window open after render - If checked the console window will stay open after the render completes. By default the console window will close after the render completes. Selecting this option will leave the console open so that the user can scroll through the YafaRay render engine output messages. Leaving console open after render is the only way to see warnings or errors from the YafaRay render engine.

Start console window minimized - If checked the console window will open in a minimized state. With this option checked the console window will no longer pop-up when the render engine is spawned. This is very helpful when batching a sequence of renders.

YafaRay4tS Viewers

Disable All Viewers - Disables all Viewers

Internal Viewers Active/Disabled - Enable/Disable Internal Viewers

Internal Viewer:

Generic
iOptDetector

Generic Viewer

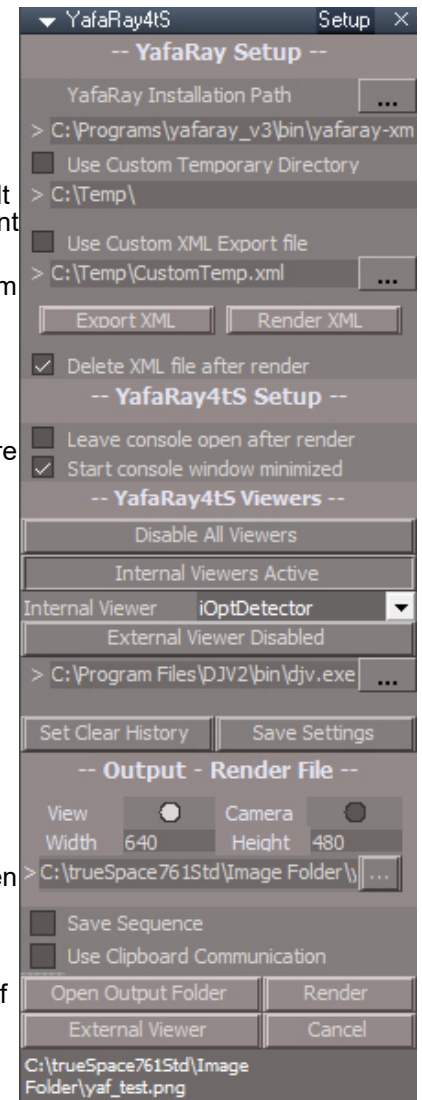
If enabled the Display floating panel view opens when the render completes.

The Display is a trueSpace floating panel that displays the rendered image in a fixed 320x240 [4:3] pixel ratio.

Any rendered image using a different pixel ratio will display distorted, but will render properly.

iOptDetector Viewer - If enabled a trueSpace window frame view is used.

Requirement: The iOptDetector plugin must be Installed and Loaded from the Package Manager.



External Viewer Disabled/Active - If enabled by default the TGA Viewer opens when the render completes.

> Default path: C:\trueSpace761\ts\TGA_Viewer.exe

Requirement: The Output- Render File format must be in the Truevision Targa (*.tga) file format.

From the TGA Viewer - File menu, you can save the rendered image as PNG, JPG, BMP and GIF file formats.

Also supports a Custom Viewer.

Opens a user specified image viewer when the render completes. Use the File browse dialog button to enter the path where it is located.

This can also be used to open an Image Editor that is registered to open with the rendered image file format.

Example: C:\trueSpace761\ts\Image Folder\yaf_test.tga

External Viewers will open after the end of rendering an animation.

Set Clear History - press and look in the status line to see if it turns off or on. When on undo history will be cleared during several processes.

Save Settings - Saves your preferred current settings within trueSpace and to the trueSpace directory that will reload after Resetting the Default Context.

YafaRay4tS also has built in support for the DJV professional review software for VFX, animation, and film production and the 3Delight render engine advanced image viewer tool i-display both of which can handle animation review and multiple file formats.

<https://darbyjohnston.github.io/DJV/>

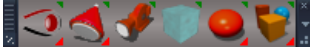
<https://www.3delight.com/>

Output – Render File

Use Clipboard Communication - use a style of running the render that allows for some usage of trueSpace while the render is running. This is not compatible with combined workspace/modelspace animation rendering and will be disabled automatically.

YafaRay4tS User Interface

YafaRay4tS Toolbar



LMB = Left Mouse Button
RMB = Right Mouse Button



YafaRay4tS Settings

LMB = Opens the Default aspect in the Stack/Panel
RMB = Opens the Setup aspect in the Stack/Panel
Inserts the YafaRay4tS object into the current scene if it is not present



YafaRay4tS Help

LMB = Opens this help file
RMB = Opens the About aspect in the a floating panel
Inserts the YafaRay4tS object into the current scene if it is not present



YafaRay4tS Scene Utilities

LMB = Opens the YafaRay4tS Scene Utilities



YafaRay4tS Background Settings

LMB = Opens the active background panel
RMB = Opens the Render Preferences panel



Infinite

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel



Area Light

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel



Directional Light

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel



Sun Light

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel



Point Light

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel



Spot Light

LMB = Activates the Light tool widget
RMB = Opens the Lights preferences panel in the Stack/Panel

**Sphere Light**

LMB = Activates the Light tool widget
 RMB = Opens the Lights preferences panel in the Stack/Panel

**IES Spot Light**

LMB = Activates the Light tool widget
 RMB = Opens the Lights preferences panel in the Stack/Panel

**YafaRay Camera**

LMB = Activates the Camera tool widget
 RMB = Opens the Camera aspect in the Stack/Panel

**YafaRay Volume**

LMB = Inserts a YafaRay Volume object into the scene
 RMB = open the Volume Integrator panel

**Faceted Normals**

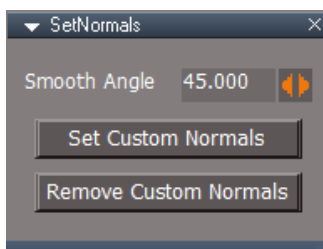
LMB = Apply Hard Normals to selected object with the value of 0 degrees.
 RMB = Open the SetNormals panel

**Smooth Normals**

LMB = Apply Smooth Normals to selected object with the value of 181 degrees.
 RMB = Open the SetNormals panel

**Set Normals**

LMB = Apply Smooth Normals to selected object with the value entered in the SetNormals panel
 RMB = Open the SetNormals panel



All mesh objects render with a default smoothing angle of 30 degrees.

Smooth Angle

The value to set for the mesh object smoothing.

Set Custom Normals

Set the normal smoothing angle for the selected mesh object.

Remove Custom Normals

Delete the custom normals therefore defaulting to a 30 degree smoothing value

**Render Scene**

LMB = Renders scene

RMB = Opens the current Lighting Method aspect in the Stack/Panel

**Render Object**

LMB = Renders selected object

RMB = Opens the current Lighting Method aspect in the Stack/Panel

**Render Area**

LMB = Renders portion of screen

RMB = Opens the Camera aspect in the Stack/Panel

RClick in 3D Space to deactivate

**Render Animation**

LMB = Opens the Render to File panel

RMB = Opens the Animation aspect in the Stack/Panel

**Render to File**

LMB = Opens the Render to File panel

RMB = Opens the current Lighting Method aspect in the Stack/Panel

Unofficial Updates version only: If you lose the YafaRay4tS toolbar, open the YafaRay4tS Setup library and load the YafaRay4tS toolbar to automatically restore it.

Default Panel

Render Settings

Clay Render - Enables Clay Render

Renders all materials with a White Diffuse Material

Smooth Normals - Set maximum smoothing for the selected object

Default Normals - Set the default 30 degrees smoothing for the selected object

Input Color Space - Color processing types for all textures:

LinearRGB - Linear with no color processing for HDR/EXR files.

sRGB - Color processing with Gamma 2.2. [Recommended]

XYZ - Experimental color processing.

Denoise Settings

Denoise - Enables Denoise

Chrominance - Color Noise control

Luminance - Brightness Noise control

Mix - Proportion of Denoise and original image

Draw Parameter

Log Draw Parameter - Logs rendered results to a html file at the same location as rendered the image.

Enter comments that will appear in the html file.

Bucket Rendering

Bucket Rendering is only valid when the Save Time is greater than 0. The results of the partial render can be seen using the OptDetector Viewer or by using Windows Explorer to navigate to the render folder. The progress will show with extra large icons or when the Preview pane is on.

Tile Order

Centre - Build image from the center

Random- Build image randomly

Linear - Build image from top to bottom

Tile Size - Size of the tiles used for rendering

Save Time(Partial Save Timer) - Number of seconds between partial render saves.

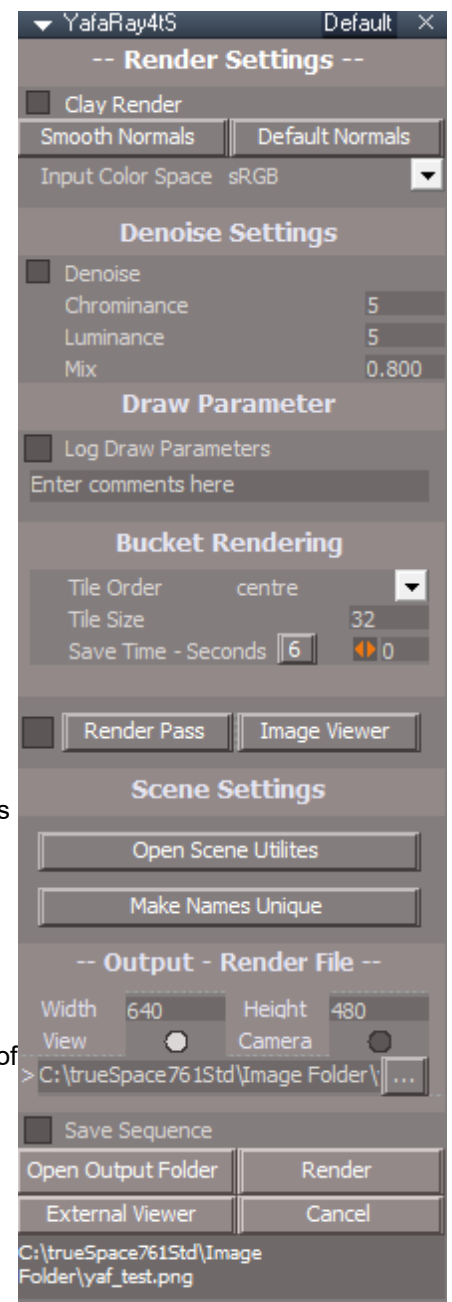
6 sets the Save Time to 6. Green active status when value greater than 0.

Can be used to observe a long render to see if things are going well.

Results during the render can be seen in Windows Explorer and in the optional OptDetector Viewer.

Do not set the time too low because your machine may not be able to save quickly enough.

Set the value to zero to deactivate the Partial Save Timer.



Yafaray bug: Denoise is not compatible with the alpha channel in tga format renders

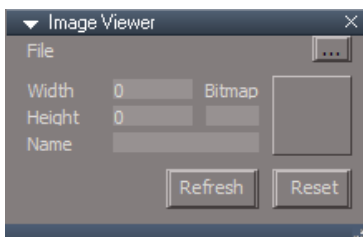
Render Pass.

Select this button to Open/Close the Render Pass floating panel.

[Render Pass](#)

Image Viewer

open a panel for loading images into a window for viewing



Refresh -

Reset - clear the panel image and data

Scene Settings

Open Scene Utilities - Opens YafaRay4tS Scene Utilities for processing scenes and scene objects to get them ready for sharing and rendering.

Make Names Unique - Renames renderable items that have the same name to avoid material definition conflicts.

[Output – Render File](#)

[YafaRay Render Settings](#)

YafaRay4tS Scene Utilities

Import and Export

For importing and exporting YafaRay4tS scene files. Use this for the easiest way to update the YafaRay4tS scene and all associated elements.

Texture Source Folder - the path of the texture files that will be used in the render. YafaRay can only see texture files on disk. It cannot see trueSpace internal bitmap textures.

Process Imported Scene

Replaces the YafaRay4tS node in the scene updating all of the existing settings, excluding the YafaRay Installation Path. If the Output Render File path does not exist, a default path will be assigned. Updates the texture paths based on the path in the Texture Source Folder.

This will then run in turn the conversion scripts for materials, lights, cameras and volume objects.

This process is the 1 click method to import, convert and update a scene.

Gather Textures for Sharing

Copies all of textures in the scene to the Texture Source Folder.

Update YafaRay4tS

For updating previous versions of YafaRay4tS scenes to the current version using multiple steps. This section of the panel may be obsolete.

YafaRay4tS Panel

Replaces the YafaRay4tS panel in the scene with all of the existing settings, excluding the YafaRay Installation Path. It does not update the Output Render File path.

YafaRay Materials

Replaces all of the YafaRay Materials in the scene with the current YafaRay Materials.

D3D Materials - Opens the **D3D Material Converter**

In order to render in YafaRay4tS, all existing materials in the scene must be converted to a **D3D Shader**.

From the Default aspect in the D3D Material Converter, uncheck **Selected Only**, and select the **Convert** button.

After all of the scene materials are converted to **D3D Shaders**, you can convert all of the scene materials to **YafaRay Materials**.

YafaRay Lights

Replaces all of the YafaRay Lights in the scene with the current YafaRay Lights.

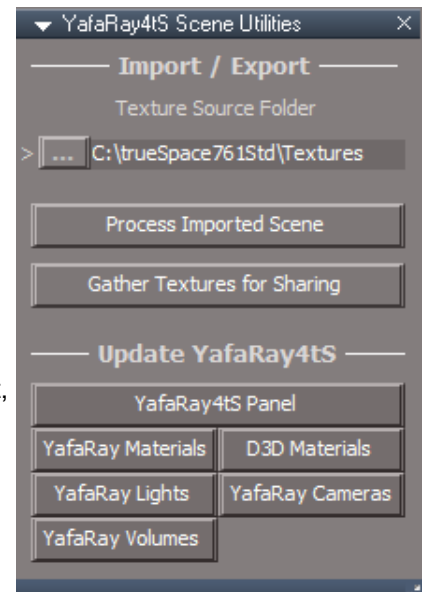
YafaRay Cameras

Replaces all of the YafaRay Cameras in the scene with the current YafaRay Cameras.

YafaRay Volumes

Replaces all of the YafaRay Volumes in the scene with the current YafaRay Volumes.

None of the D3D Preview settings are transferred to the updated YafaRay4tS Background panel



Camera

Camera Settings

Cycle Select - select the cameras in the scene one at a time. This sets the camera but does not change render mode from View to Camera.

Camera - Camera that has been set to render from.

Set - Sets the selected Camera for rendering, changing render mode from View to Camera.

Aspect Ratio - Pixel aspect ratio.

Convert - change the set camera to a YafaRay type camera

Camera Type - Camera type for YafaRay to use when in render View mode.

- Perspective
- Architect
- Orthographic
- Angular
- Equirectangular - for YafaRay v3.4.2 and up

New View - open a new 3D view using the set camera. The tS Unofficial Updates will ask if the grid should display in the new view or not. Original tS does not add a grid to new 3D views.

Main View - set the main 3D view as the camera view for the set camera

EntryPoint - renames the set camera to the special name "EntryPoint" which sets up the scene to load with that camera view active in a 3D view. This does not happen when loading tS, only when loading a scene.

These settings in the Perspective/Architect, Orthographic and Angular sections are for use in the case where no render camera has been defined or the defined render camera is not a YafaRay Camera.

The renderer will take the settings from the render camera directly by default.

Perspective/Architect - View

Perspective is the standard camera mode.

Architect camera type works like a Perspective camera, the only difference is that the vertical component of the perspective effect is neglected, so scene vertical lines are not convergent.

Aperture - Aperture size.

DOF - Depth of Field.

Type - Bokeh type, shape of the out of focus points when rendering with DOF enabled

- Disk1
- Disk2
- Triangle
- Square
- Pentagon
- Hexagon
- Ring.

Bias - Bokeh bias.

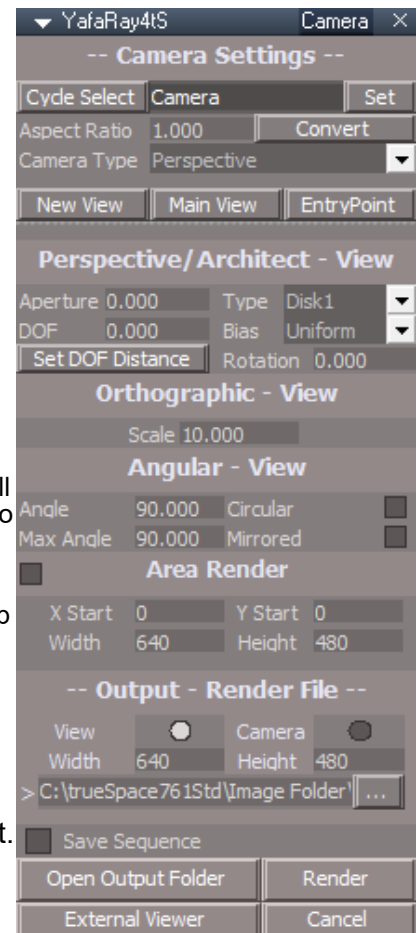
- Uniform
- Center
- Edge

Rotation - Bokeh rotation.

Orthographic - View

Orthographic - projection of the scene, without perspective effects

Scale - Horizontal size of image plane.



Angular - View

Angular - useful to produce up to 180 degree panoramas or a nice perspective distortion

Angle - Horizontal opening angle of the camera.

Max Angle - Maximum angle visible.

Circular - Blend out areas outside the Max Angle 'Circular Iris'.

Mirrored - Mirror X-direction. Use for generating Light Probe images.

Area Render

Area Render - Enables Area Render. Used to render a portion of the view.

X Start - Left starting coordinate.

Y Start - Top starting coordinate.

Width - Width of view area to be rendered.

Height - Height of view area to be rendered.



Render Area

LMB = Renders portion of screen

RMB = Opens the Camera aspect in the Stack/Panel

RClick in 3D Space to deactivate

This button tells trueSpace to render the selected portion of the current viewport.

On the Render Toolbar, press the Area Render icon button.

Click on the upper left corner of the section of the viewport you want trueSpace to do an Area Render on, and then hold and drag the mouse to form the Area Render selection frame.

trueSpace will then render that section of the scene.

[Output – Render File](#)

Scene Camera



FOV - set the vertical angle of the camera lens

Set Camera - set as the render camera

Set DOF Distance - press then select a scene object to set the depth of field distance for the camera

Reset Rotation - rotate the camera to look in the negative Y direction

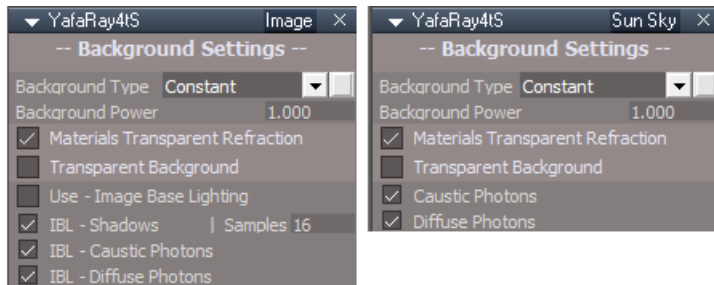
View/Previous View -

Perspective/Architect, Orthographic and Angular camera settings - see the Camera panel section above

When this camera is set as the render camera the renderer will use the settings of this camera, not the corresponding settings found in the YafaRay4tS Camera panel which are only used for no render camera chosen or when the render camera is not a YafaRay camera.

[YafaRay Camera Settings](#)

Background



Left - settings for Constant, Gradient and Image type background

Right - settings for Sun Sky and Darktide Sun Sky.

Background Settings

Background Type - Background Shaders:

Image - texture. Use with a HDR or EXR texture file for more accurate background lighting (IBL).

Gradient - Enables a gradient background type composed of two sky colors above the horizon and two colors below it.

Sun Sky - Enables a background type that approximates the full spectrum of daylight for various atmospheric conditions. Uses colors differently than the more advanced Darktide Sun Sky.

Darktide SunSky - Enables a background type that approximates the full spectrum of daylight for various atmospheric conditions.

Constant - Enables a background type that casts light with a single color.

After choosing a background type press the white button to the right to update the UI

Background Power - Brightness and intensity of light cast by the background. Will also effect Sun Sky sun light intensity. Does not effect Darktide Sun Sky sun light intensity or background brightness.

Materials Transparent Refraction - Materials refract the Transparent Background. Transparent must be enabled for this option to work.

Transparent Background - Render Background as Transparent.

Use - Image Based Lighting - use the background as a light source (IBL)

IBL - Shadows - Background light casts shadows.

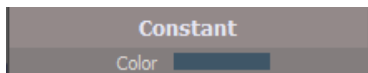
IBL - Samples - Number of samples to be taken from background image when doing lighting calculations .

IBL Diffuse Photons - background will shoot diffuse photons

IBL Caustic Photons - background will shoot caustic photons

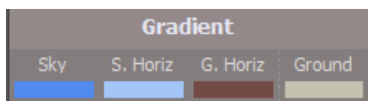
Diffuse Photons - background will shoot diffuse photons

Caustic Photons - background will shoot caustic photons



Constant Color

Color - Color to use for the Constant background shader. New YafaRay updates now allow this background type to work with all lighting methods.



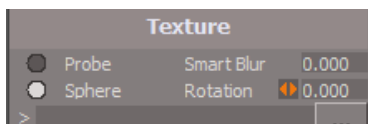
Gradient

Sky - Zenith color.

S. Horiz - Sky horizon color.

G. Horiz - Ground horizon color.

Ground - Ground color.



Texture

Probe - Sets background image texture type to Light Probe(mirror ball).

Sphere - Sets background image texture type to Spherical Projection(latitude/longitude).

Smart Blur - Reduce noise when using HDRI textures for lighting.

Rotation - Horizontal rotation of the background image.

Using the Preview and changing Cast Shadows or Background Power will require pressing the Update Lights button to see the changes.



Sun Sky

Use Sun - Enables Sun

Sun casts shadows - Enables Sun shadows

Power - Amount of Sun light added to the scene. Darktide brightness also effects the intensity of the sun light.

Sun Panel - open the panel for the light inside the YafaRay node used to represent the Sun. It has controls for switching shadows on and off and it has controls to control the quality of the preview lighting. See the trueSpace manual chapter 7 for more information, 7.1.3 Working With The Real-time Shadow Parameters.

Preview is required to transfer data to and from the Sun Light Direction settings.

To Light - Transfers the Light Direction numbers to the position of the Preview Sun Light.

From Light - Transfers the Light position from the Preview Sun Light to the Light Direction inputs. This is only useful when manually selecting the DirectionalSun object and rotating it. Use the Preview to control the Sun position and orientation.

Light Direction - X, Y, Z component of the Sun's vector position. Use the Preview controls for a much better user experience.

BG Light - Enables sky background to contribute lighting to the scene.

BG Light - Shadows - sky background light casts shadows, same control as IBL Shadows.

BG Light Samples - Samples for both the Sun and the Skylight. The more samples the less noise and the better glossy reflections.

Turbidity - Controls the density of particles in the air. The higher the value the more sunlight will be diffused into the sky.

Horiz. Brightness - Controls the brightness of the horizon colors.

Horiz. Spread - Controls the edge transition of the horizon.

Sun Brightness - Controls the brightness of the sun.

Sun Size - Controls the size of the sun.

Backscatter - Controls the sun's color appearance and the halo around it.

Darktide adds additional controls to the Sun Sky. The controls below are only for Darktide.

Controls above are for for both Sun Sky and Darktide Sun Sky

Darktide Sun Sky

Color Space - Color processing types for the Background.

CIE (D50)

CIE (E)

sRGB (D50)

sRGB (D65)

Turbidity - Controls the density of particles in the air. Same control as in the Sun Sky section.

Brightness - Controls the brightness of the sky. This combines with the Background Power setting to control the background light intensity.

Altitude - Adjustment relative to the Background center.

If Altitude increases, the Background Horizon lowers.

Exposure - Lighting multiplier.

Night - Renders the scene with the Sun acting as the Moon.

Preview plus BG Sky Light and changes to Brightness or Background Power will require Update Lights.

[**YafaRay Darktide Sunsky**](#)

[**YafaRay Background Settings**](#)

Preview

Scale - control the size of the preview sphere. The scale is equivalent to the radius of the sphere.

Show/Hide - make the preview sphere and lights visible or invisible

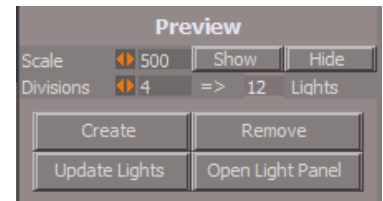
Divisions - controls the number of spotlights generated to represent the background light from the preview sphere. For lights generated from texture image spheres the number of lights is 2 raised to the number of divisions. So 3 gives 8 lights and 7 gives 128 lights. The gradient, sun sky, darktide and constant color background spheres have values for 12 and 42 lights with the cutoff at division between 4 and 5.

Create - Makes a D3D Preview in the Workspace scene by adding a large inside out Sphere and Lights. Any existing preview system will be replaced. For image type backgrounds enter the path to the image. Enable/disable **IBL** - **HDRI** - **Gradient** - **Constant Color** before pressing the button. For the Sun Skys' check **BG Sky Light** to generate lights based on the background settings.

Remove - remove the sphere and lights.

Update Lights - for image based lights will update the light arrays shadow enabled disabled state(also see the ImageSphere panel Update button). For Constant, Gradient and the Sun Skys this will update shadow on/off and the light colors and intensity.

Open Light Panel - for Constant and Gradient type backgrounds this will open the YafaRayLightRig panel. For Sun Sky and Darktide SunSky the SunSkyObject panel will open. Image Texture type background will open the ImageSphere panel.



The Previews and preview tools have no effect on the render.

There is a bug in trueSpace where primitive creation is negatively effected by large inside out geometry in the scene. Use the Hide button before adding any primitives to the scene. Show can be used after the primitive is created.

The trueSpace Unofficial Updates has built in code to hide the background sphere automatically.

The light coming from preview lights below ground level do not cast shadows. The preview assumes that the scene has a ground or ground plane at z=0 when shadows are enabled.

SunSkyObject

Sun Distance - value from 0 to 1 that controls how far away the sun is relative to the preview scale. 1 gives the better preview result for position in the rendered image and better background sphere shader results.

Elevation Ang. - elevation angle is how high up in the sky the sun is 0 to 90.

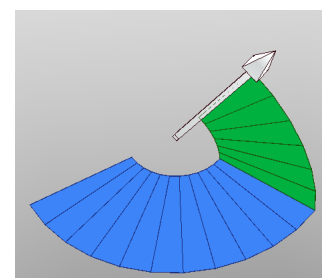
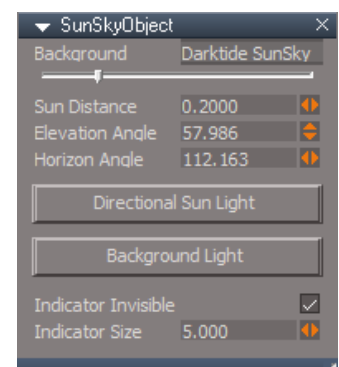
Horizon Ang. - the aximuthal angle of the sun in the horizontal direction -360 to +360.

Directional Sun Light - open the light panel in a floating window to gain access to controls for the size and other settings of the light for improving the preview appearance.

Background Light - open the YafaRayLightRig panel to control the array of lights used to represent the background lighting.

Indicator Invisible - uncheck to show a graphical indicator of the sun direction(elevation angle and horizon angle) at the center of the scene.

Indicator Size - size of the indicator geometry



YafaRayLightRig

Cone Angle - control the cone angle of all the spotlights in the array. Smaller angles can give better shadow resolution

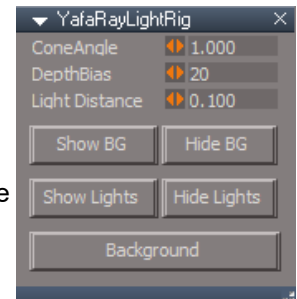
Depth Bias - . See manual 7.1.3 Working With The Real-time Shadow Parameters

Light Distance - value from 0 to 1 that controls how far away the background lights are relative to the preview scale.

Show BG/ Hide BG - show and hide the background sphere.

Show Lights/ Hide Lights - show and hide the background light array.

Background - open the YafaRay4tS background settings panel



All these controls are interrelated. So changing one will likely require changing the other controls.

ImageSphere

Gamma - control the preview image brightness and contrast.

Light Distance - value from 0 to 1 that controls how far away the background lights are relative to the preview scale.

Cone Angle - control the cone angle of all the spotlights in the array. Smaller angles can give better shadow resolution

Saturation - light saturation color, adjust to match the rendered result for a better future preview

Multiplier - intensity multiplier, adjust to match the rendered result for a better future preview

Depth Bias - shadow offset from geometry.

Filtering Quality - At all settings except the maximum, it adjusts the quality of the filtering done on the shadows. When set to maximum(5), Poisson disk shadow filtering is used and the two parameters Filter Size and Samples become active.

Filter Size -Larger values will give a softer and broader edge to the shadow. Shows green when active.

Samples Cnt - Samples Count is the number of samples used to generate the soft shadows. Shows green when active.

Map Size - size of the shadow map textur

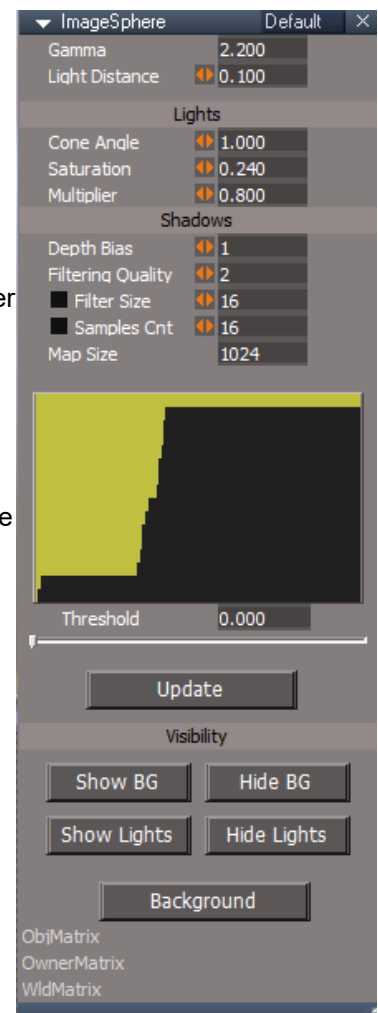
Threshold - disable shadows for dimmer lights. The graph shows the relative intensity of each light as the length of the horizontal line. Any line too short to reach the slider position will not cast shadows. You can also click inside the graph to set the threshold value.

Update - enable/disable shadows for each light based on the Threshold value

Show BG/ Hide BG - show and hide the background sphere.

Show Lights/ Hide Lights - show and hide the background light array.

Background - open the YafaRay4tS background settings panel



These controls can be used to improve the appearance of the preview and can be used after a render to refine the preview to more closely match the rendered result.

Volume Integrator

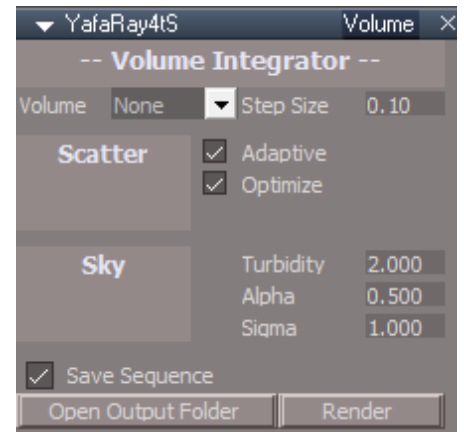
Volume Type - Selects the volumetric type:

None - Disables volumetrics.

Scatter - Enables Single Scatter integrator.

Sky - Enables Sky.

Step Size - Sets the step size value, the main control for the precision of volumetric rendering.



Single Scatter

Adaptive - Turns adaptive fog calculation on, optimizes stepping calculations for NoiseVolumes.

Optimize - precomputes the attenuation in the entire volume at a 3d grid of points.

Attenuation Grid Resolution is found on the Volume Region objects. Higher values give improved shading detail when Optimize is enabled.

Sky

Turbidity - amount of Suspended particles.

Alpha - amount of Absorption

Sigma - amount of Scattering.

Sky volume integrator is not in the YafaRay docs. Only Single Scatter is documented.

Volume Region

Volume Type

UniformVolume - a uniform density volumetric effect, useful for dust, fog, mist, etc.

ExpDensityVolume - decreases the density of the volume as height increases.

NoiseVolume - procedural texture controls the density of the volume.

General Settings - common to all volume types

Absorption - σ_a , light absorption.

Scatter - σ_s (scattering), scattering occurs when light traveling along a path encounters a particle in a volume and is redirected to a new path

Attenuation Grid Resolution - higher values give improved shading detail when the Volume Integrator, Single Scatter, Optimize is enabled.

ExpDensity Settings

Height - controls the density of the volume before it starts to fall off.

Steepness - controls how quickly the density falls off.

Noise Settings

Sharpness - controls how sharp a NoiseVolume looks at the border between areas of high and low density.

Cover - defining what percentage of a procedural texture maps to zero density.

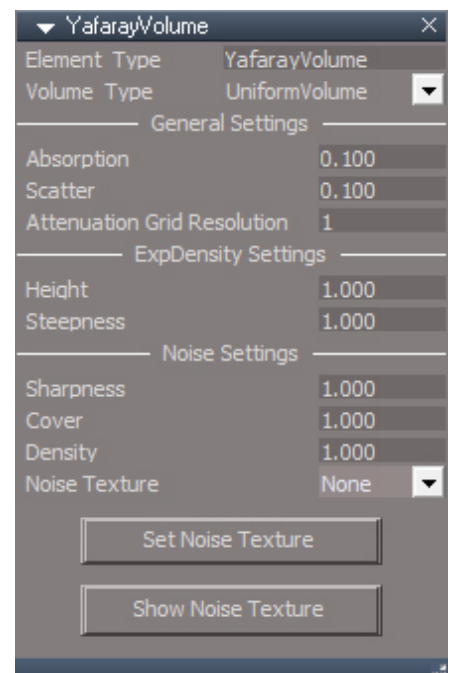
Density - a global density multiplier.

Noise Texture - the procedural texture to use with the NoiseVolume type

- None - no texture selected
- Cloud
- Marble
- Wood
- Voronoi

Set Noise Texture -

Show Noise Texture -



Only one noise type volume texture can be used per scene. Cannot have multiple noise volumes with different textures. Any extra noise textures will be ignored and one will be used for all noise based volumes in the scene.

Animation

Animation Settings

Set From Timeline - Sets the Start and End frames from the scene's Start and Stop frames.

Set From Keyframes - Sets the Start and End frames from the scene's Keyframes or the selected object in Object Render mode.

Start Frame - Frame to start rendering from.

End Frame - Last frame to render.

Start Number - Number start with for file sequence.

Zero Padding - Number of leading zeros to use when padding the number for the file name.

Start - Batch Render - Exports the XML files for the frame range specified in **Start Frame** to **End Frame** and spawns the YafaRay renderer to render the frames sequentially in the background. After the images are rendered, the generated XML files are deleted.

Delete XML file after render - Delete the generated XML file on render completion.

Start console window minimized - If checked the console window open then minimize.

With this option checked the console window will no longer pop-up when the render engine is spawned. This is very helpful when batching a sequence of renders.

Output – Render File

View - If enabled YafaRay will render the Workspace view

Camera - If enabled YafaRay will render the Camera view

Width - The width of the image rendered.

Height - The height of the image rendered.

> - File name for image output. This is where the rendered results will be saved

Open Output Folder - Open windows explorer to the rendered image

Render Animation - Exports the XML file and spawns the YafaRay renderer

Cancel Render - Cancels the animation render

Model Processing - Render animations from an opened Model view

Model Mesh Processing - Renders Model objects mesh animations: NURBS, Metaballs, and Deformations

Protect Workspace

Opens Protect Workspace - see next page

Sequence Player

Plays a sequence of images in a loop

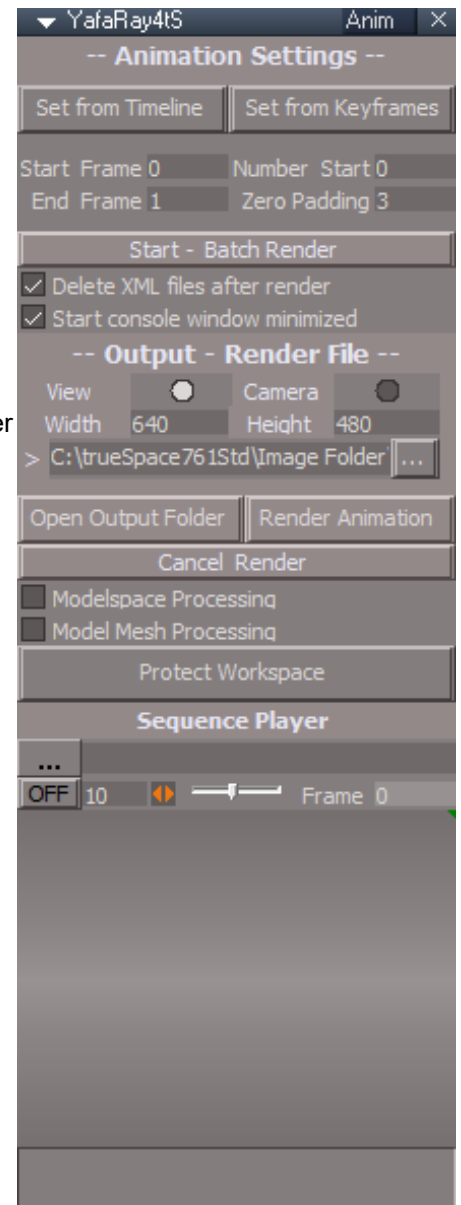
File Dialog- File browse dialog for selecting the first image in a sequence of images

Off / On- Stop / Play

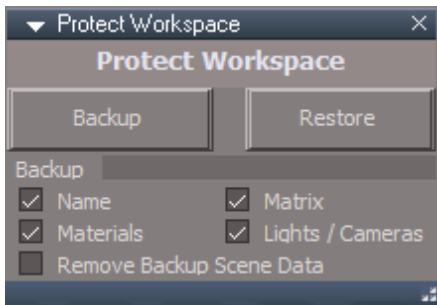
Enter the amount of images in the sequence of images

Slider control sets the speed of the playback

Right click the display to Reset



Protect Workspace



Backup - Performs a backup of the scene

Restore - Restores the Backup

Name - Protects changes to object names

Materials - Protects conversion of Workspace materials to Lightworks materials

Matrix - Protects changes to transformation attributes

Lights /Cameras - Protects changes to Light's Angle, and Camera's FOV attributes

Remove Backup Scene Data - Removes all of the backup data nodes from the scene when restoring

Model Processing

Steps to process Model animations from the **Anim** aspect, with the main view in Workspace and no Model view open

- 1.) Check **Model Processing**
- 2.) Select the **Protect Workspace** button, **Backup** button, and Save your scene
- 3.) Switch the main view to Model and open a new Workspace 3D Window
- 4.) Select the **Render Animation** button
- 5.) When the render has completed, switch the main view to Workspace
- 6.) Select the **Restore** button

Model Mesh Processing

Steps to process Model mesh animations, NURBS, Metaballs, or Deformations from the **Anim** aspect, with the main view in Workspace and no Model view open

- 1.) Check **Model Processing** and **Model Mesh Processing**
- 2.) Select the **Protect Workspace** button, **Backup** button, and Save your scene
- 3.) Switch the main view to Model and open a new Workspace 3D Window
- 4.) Select the **Render Animation** button
- 5.) When the render has completed, switch the main view to Workspace
- 6.) Select the **Restore** button

WARNING! Rendering with Model Mesh Processing

Switching layouts will crash trueSpace if you do not Exit trueSpace first.

Rendering with the main view in Workspace and a new Model view will also crash trueSpace.

IMPORTANT! Close Model before using Protect Workspace - Backup or Restore

Protecting the camera is not always successful, so setting a single key frame will guarantee that the matrix value won't be altered.

Lighting Methods

Lighting Method - At the top of each panel is the lighting method that will be used by the YafaRay render engine. When you choose a lighting method from this combo control from the Stack, it will switch to that lighting method aspect. Every lighting method has a common Anti-Aliasing Settings, General Settings, Output - Render File, and their relevant settings.

Common Lighting Controls

All the lighting methods have 3 sections in common. Anti-Aliasing, General and Output - Render File.

Anti-Aliasing Settings

Filter - 3 Anti-Aliasing reconstruction filters to use when resampling:

Gaussian - Slight blurring

Mitchell-Netravali - Improves sharpness of the edges, Default setting

Box - Equal weighting of all samples. It is fast, but isn't efficient dealing with certain types of noise and produces post-aliasing.

Min Sample - Number of samples to use on first Anti-Aliasing pass.

Pixel Width - Width of Anti-Aliasing pixel filter. [0-8]

Passes - Maximum number of Anti-Aliasing passes.

Inc Sample - Number of samples for additional Anti-Aliasing passes.

Threshold - Color threshold for additional Adaptive Anti-Aliasing samples in subsequent passes. If AA Threshold is 0, the whole image is resampled in every pass.

General Settings

Ray Depth - Amount of times that rays can be reflected in specular surfaces or pass through transparent surfaces.

Transparent Shadow depth - Amount of transparent surfaces that shadow rays can get through to find light sources.

Gamma - The gamma value target for the rendered image.

CPU Threads - Number of CPU threads used by YafaRay. [-1] All threads.

This number should be equal to the number of CPU threads in your computer or minus one if you find that using all the CPU threads bogs down your computer.

Normal Shadows / Transparent Shadows - Switches from Normal to Transparent Shadows.

Save Alpha - Exports an alpha file in addition to the RGB output file.

Clamp RGB - Color depth is reduced to a low dynamic range for better Anti-Aliasing filtering in high contrast areas.

Output – Render File

View - If enabled YafaRay will render the Workspace view.

Camera - If enabled YafaRay will render the set Camera view.

Width - The width of the image rendered.

Height - The height of the image rendered.

> File name for rendered image output. This is where the rendered results will be saved.

Save Sequence - This will let you render repeated images, saving them to a new file name each time without the need to manually type in a new name. Only works when rendering from the panel.

Open Output Folder - Opens the folder entered into the above path.

Render - Exports XML file and spawns the YafaRay renderer.

[YafaRay Lighting Methods](#)

[YafaRay Render Settings](#)

Lighting Methods Overview.

Direct Lighting

For scenes we don't need global illumination for, or we can get by with background lighting and/or AO. Use cases include Studio Lighting with arealights/IBL/ AO/ Caustics, AO pass for composition, Fluids animation with Caustic photons and Outdoors with IBL or Sunsky.

Advantages:

Very fast in scenes where indirect lighting is not needed.

Can render independent caustic photonmaps and ambient occlusion.

HDR backgrounds (IBL, Sunsky) can work as light sources, simulating indirect lighting.

Disadvantages:

No indirect lighting.

Path Tracing

Path tracing is effective if most of the path rays are able to find a light source from the first and second bounce. By using big area lights, the chance of finding a light source for path rays increases. The best area light for path tracing is a IBL/Sunsky background, which works as an dome arealight. Path tracing is a good for all kinds of open scenes.

Advantages:

It performs Global Illumination.

Fast in outdoors, because paths find the background easily.

Unbiased, delivers correct results.

Soft indirect lighting if enough sampling.

Disadvantages:

Variance shows up as noise.

Lot of rays are needed for caustics.

Inefficient in indoor scenes, when light sources are too hidden or too small.

Doesn't like omni lights (spot, point) and mirror surfaces. Better use area light types and glossy.

Photon mapping

Global 'Photon mapping' constructs a low resolution irradiance map. It needs an interpolation algorithm = Final Gather. The precision of the GI estimation improves if there are enough photon hits and the photons flow is optimized. PM is good for 'closed' scenes.

Advantages:

- It performs Global Illumination.
- Fast, efficient GI estimation in indoors.
- Best quality/speed ratio.
- Fast caustics.

Disadvantages:

- Not well suited for outdoors
- Sometimes requires photon map tweaking.
- Artifacts.

Bidirectional path tracing

Advantages:

- It performs Global Illumination.
- Combine advantages from path tracing and photon mapping.
- More efficient than path tracing for indoors and for caustic effects.
- Unbiased, delivers correct results.
- Good for scenes with lot of indirect lighting.

Disadvantages:

- Variance shows up as noise.
- Not well suited for outdoors.
- Inefficient in indoor scenes, when light sources are too hidden.
- "Is unstable"

Direct Lighting

Caustics

Photons - Number of Caustic Photons to use.

Caustic Photon Method - Caustics Photon Method types:

None - No Caustics Photons are rendered.

Path + Photons - Mix of a Caustic Photon Map and Path tracing Caustic rays are rendered.

Photons - Fast photon map is used to render caustics. Path tracing caustics rays are not rendered.

Path - Path tracing caustics rays are rendered.

Mix - Maximum number of photons to be mixed for caustic calculation.

Depth - Maximum number of scattering events for photon shooting.

Radius - Blur radius for photons.

Photon Map Processing - Types of Caustic Photon Map Processing to generate:

Generate Only - Generates the Caustic Photon Map in the scene.

Generate Save - Generates and Saves a **yaf_test_caustic.photonmap** file to where you rendered the image.

Load - Loads the **yaf_test_caustic.photonmap** file from where you rendered the image.

Reuse Previous - Reuses the previously generated Caustic Photon Map from memory. "This should greatly improve render speeds in scenes where only camera moves."

When loading a saved map, it is very IMPORTANT to ensure they match the scene and ONLY for camera changes.

Ambient Occlusion

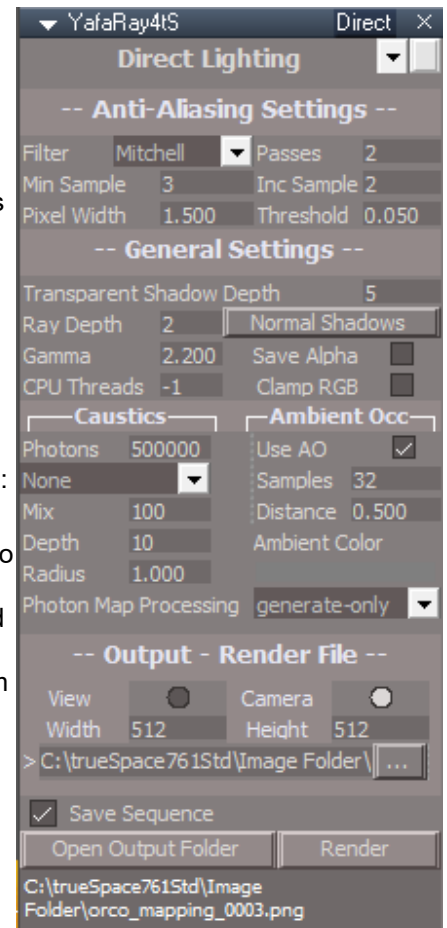
Use AO - Enables Ambient Occlusion.

Samples - Number of samples to use for Ambient Occlusion.

Distance - Blur radius.

AO Color - Color for Ambient Occlusion output. Useful for testing the AO effect.

Output – Render File



[YafaRay Caustics](#)

[YafaRay Ambient Occlusion](#)

Photon Mapping

Diffuse Photons

Photons - Number of photons to use.

Search - Maximum number of non-caustic photons to be filtered.

Radius - Blur radius for photons.

AO Color - Color for Ambient Occlusion output. Useful for testing the AO effect.

Caustics Photons

Count -Number of photons to use.

Radius - Blur radius for photons.

Photon Map Processing - Types of Caustic Photon Map Processing to generate:

Generate Only - Generates the Caustic Photon Map in the scene.

Generate Save - Generates and Saves a **yaf_test_caustic.photonmap** file to where you rendered the image.

Load - Loads the **yaf_test_caustic.photonmap** file from where you rendered the image.

Reuse Previous - Reuses the previously generated Caustic Photon Map from memory. "This should greatly improve render speeds in scenes where only camera moves."

When loading a saved map, it is very IMPORTANT to ensure they match the scene and ONLY for camera changes.

Final Gather

FGActive - Enable Final Gather (Photon Mapping only).

Show Map - Directly show radiance map (disables final gathering step).

Bounces - Number of bounces to recuse the Final Gather.

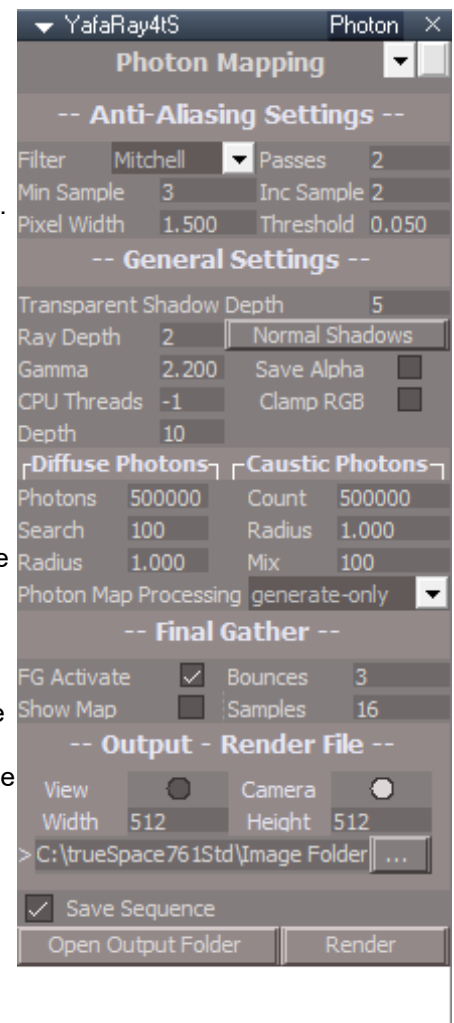
Samples - Number of samples to use for Final Gather.

Output – Render File

[YafaRay Photon Mapping](#)

[YafaRay Caustics](#)

[YafaRay Final Gather](#)



Pathtracing

Caustics Options

Caustic Photon Method - Caustics Photon Method types:

None - No Caustics Photons are rendered.

Path + Photons - Mix of a Caustic Photon Map and Path tracing Caustic rays are rendered.

Photons - Fast photon map is used to render caustics. Path tracing caustics rays are not rendered.

Path - Path tracing caustics rays are rendered.

Photon Options

Photons - Number of photons to use.

Depth - Maximum number of scattering events for photon shooting.

Mix - Maximum number of photons to be mixed for caustic calculation

Radius - Blur radius for photons.

Photon Map Processing - Types of Caustic Photon Map Processing to generate:

Generate Only - Generates the Caustic Photon Map in the scene.

Generate Save - Generates and Saves a **yaf_test_caustic.photonmap** file to where you rendered the image.

Load - Loads the **yaf_test_caustic.photonmap** file from where you rendered the image.

Reuse Previous - Reuses the previously generated Caustic Photon Map from memory. "This should greatly improve render speeds in scenes where only camera moves."

When loading a saved map, it is very IMPORTANT to ensure they match the scene and ONLY for camera changes.

Path Options

Photon Bounces - Number of photon (Caustics) bounces to calculate for.

Path Samples - Number of samples to use when Pathtracing. This setting is only used by the Pathtracing lighting method.

Min Bounces -

If this parameter is set to 0, russian roulette will be enabled.

If set to the same value specified in depth (max bounces), russian roulette will be disabled

If set to a value between 0 and max bounces, then russian roulette will only start be applied after this number of bounces, so we can get decent sampling in dark areas for example and get a good speedup with less noise.

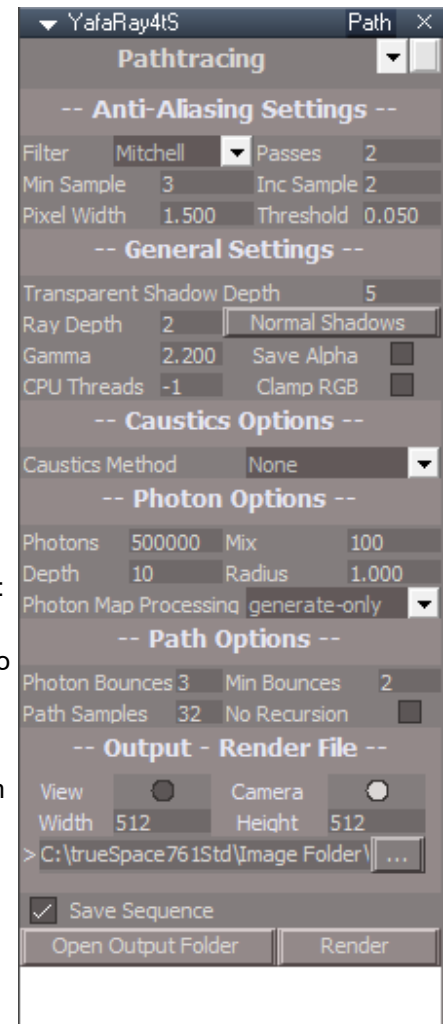
No Recursion - Turn off recursion for Pathtracing lighting method.

Output – Render File

[YafaRay Caustics](#)

[YafaRay Photon Mapping](#)

[YafaRay Path Tracing](#)



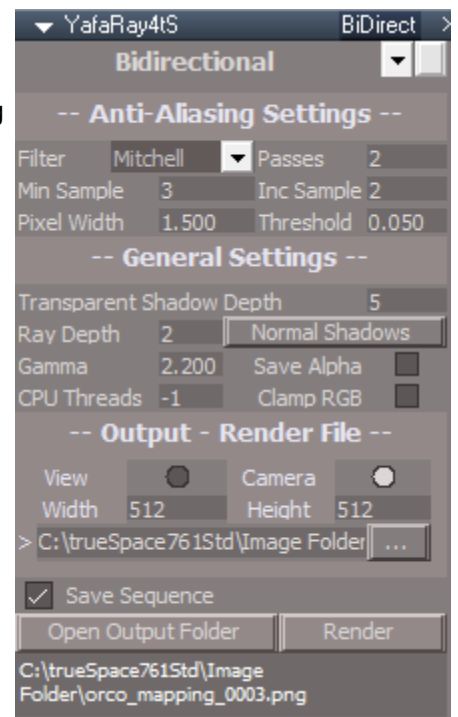
Bidirectional

“constructs random rays from the camera and from light sources, and connect each others' bounces with visibility rays to ensure they are mutually visible.”

“It combines advantages from both path tracing (unbiased) and photon mapping (caustics).”

“Unstable”

Output – Render File



YafaRay Bidirectional

SPPM Lighting

Stochastic Progressive Photon Mapping

Additional Settings

Photons - Number of photons to use.

SPPM Passes - Number of passes.

Bounces - Number of bounces.

Radius Factor - Radius to search for diffuse photons.

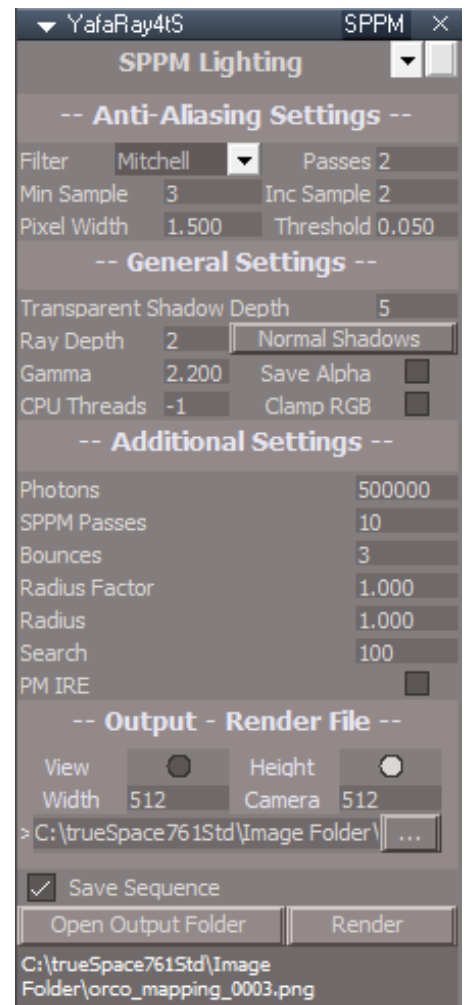
Search - Maximum number of diffuse photons to be filtered.

PM IRE- Initial radius estimation.

[Tutorial - Introduction to SPPM](#)

“SPPM—and other progressive photon mapping methods more generally—cut down the memory used to store a photon map for lighting.”

From <https://www.reedbeta.com/blog/new-ideas-in-raytracing/>



[Output – Render File](#)

YafaRay4tS Lights

Common Light Controls

Color - Light color.

Power - Intensity multiplier.

Caustic - Enable light to shoot Caustic Photons.

Diffuse - Enable light to shoot Diffuse Photons.

Photon Only - No direct light.

Cast Shadows - render shadows generated by the light.

All YafaRay4tS lights have a built in Color Picker. Select the Color aspect for advanced color options.



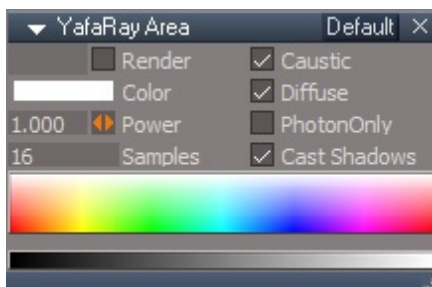
Infinite Light

Sun light model which produces parallel rays and hard-edged shadows. The same as Directional Light but does not show shadows inside trueSpace.



Area Light

Arealign is a area light type that can produce soft shadows and its shape can be seen in reflective surfaces



Render - Make the light visible in the rendered output.

Samples - Number of samples for shadows.



Directional Light

Directional light is a traditional sun light model which produces parallel rays and hard-edged shadows. The same as Infinite Light but can preview shadows.

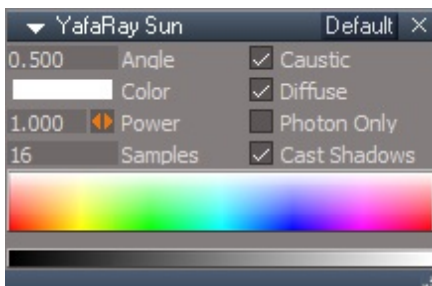


Size - Light cylinder radius in world units. This has no effect on the render.



Sun Light

Sun light will help us to get blurred-edged shadows when the shadow itself gets away from the casting object



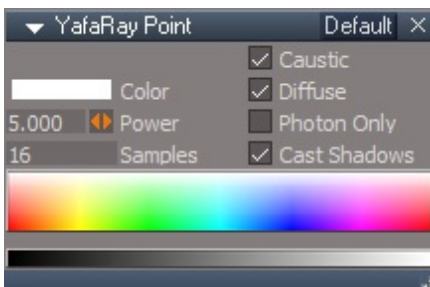
Angle - Angle of shadow casting cone.

Samples - Number of samples used for calculating lighting and shadows.



Point Light

A Point light is a typical omni directional point light source with hard shadows

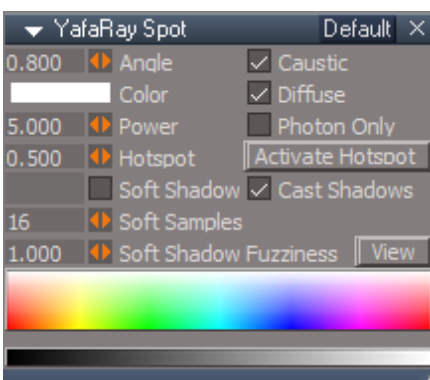


Samples - Number of samples used for calculating lighting and shadows.



Spot Light

Spot is a common point light with directional properties.



Angle - Angle of shadow casting cone.

Hotspot - Angle of the light cone hotspot.

Soft Shadows - Enable soft shadows.

Soft Samples - Number of samples used for calculating lighting and shadows.

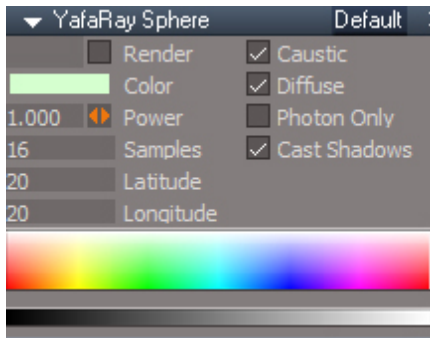
Soft Shadow Fuzziness - Amount of blurring to the Soft Shadow.

View - View from light. With light selected adjust the location of the light with the View Widget.



Sphere Light

Sphere light is a spherical area light source which can produce soft shadows.



Render - Make the light visible in the rendered output.

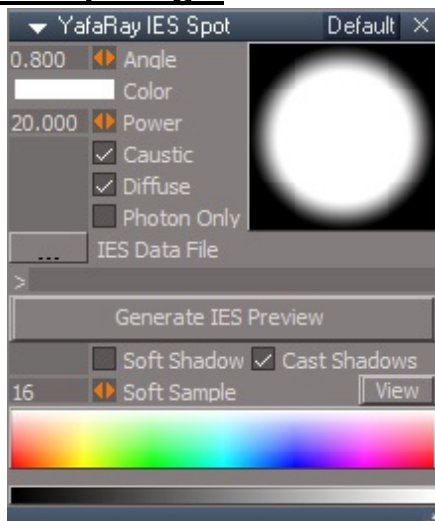
Samples - Number of samples used for calculating lighting and shadows.

Latitude - mesh detail for the Render option.

Longitude - mesh detail for the Render option.



IES Spot Light



Angle - Angle of shadow casting cone.

IES Data File - Use the File dialog to select an IES Data file to use.

Example: C:\trueSpace761\tS\SupportFiles\IES Files

Generate IES Preview - Generates the IES light in the Workspace scene.

Soft Shadows - Enable soft shadows.

Samples - Number of samples used for calculating lighting and shadows.

View - View from light. With light selected adjust the location of the light with the View Widget.

[YafaRay Lights](#)

[Light Material and Portal Material](#)

YafaRay4tS Materials

Common Material Settings

Per Material settings:

Receive Shadows - Surface will receive shadows.

Visibility - Visibility options:

Normal - Render all.

Invisible - Render only reflections and shadows.

Shadow only - Render shadows only.

No Shadows - Render without shadows.

Additional depth - Amount of raytracing depth.

Pass ID - Material ID used in the Render Pass.

Sampling Factor - a multiplier of the AA samples on all the AA passes after the first one. The minimum value is 1 so it is only used to increase the number of AA samples for the material. So to decrease the AA samples for a material reduce the general AA samples settings and use larger sampling factors on all other materials to compensate.

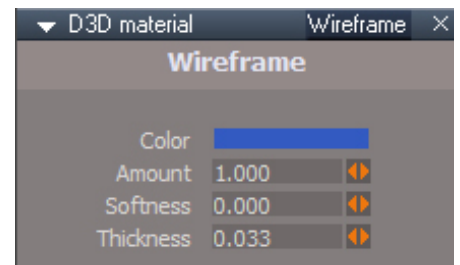
Wireframe

Color - Edge Color.

Amount - Edge Visibility.

Softness - Edge Hardness.

Thickness - Edge Weight.



The wireframe can be used in two different ways, depending on whether we want it to be part of the final rendered image or if we want it in a separate Render Pass:

* Embedded in the Render itself: set a wireframe amount. Set the other wireframe options such as color, thickness and softness, and render the scene.

* Separate Render Pass: make sure the Wireframe amount in the materials is set to 0.0 so the Wireframe does not appear in the Combined Render. Set the rest of the material wireframe options (color, thickness, etc). Enable Render Passes and select a Debug-Wireframe pass in one of the passes (preferably one of the RGBA render passes such as Vector or Color)

All Quads and Polygons will be always seen as Triangles (with the crossed line).

YafaRay Shiny Diffuse

Diffuse

Color - Diffuse Color.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Use Oren-Nayar - Enables the Oren-Nayer specular reflectance model.

Sigma - Oren-Nayer micro facet distribution parameter.

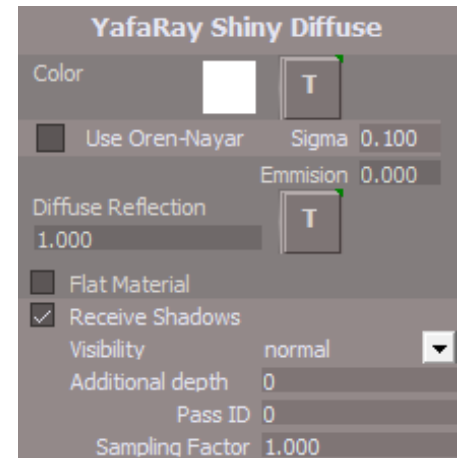
Emission - Adds brightness to the material regardless of lighting.

If the Pathtracing lighting method is used it will also generate light.

Diffuse Reflection - Amount of Diffuse reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Flat Material - special non-photorealistic material that does not multiply the surface color by the cosine of the angle with the light. if receive_shadows is disabled, this flat material does no longer self-shadow



Common Material Settings

Transparency

Transparency - Amount of transparency. [0-1]

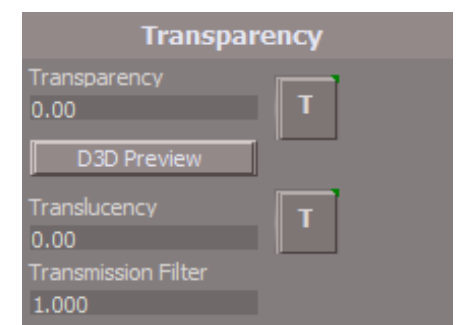
T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Transparency D3D Preview - Enables Transparency for D3D Preview.

Translucency - Amount of translucency. [0-1]

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Transmission Filter - Controls amount of tinting for light passing through the material.



Specular

Use Fresnel Refl. - Enables Fresnel reflection.

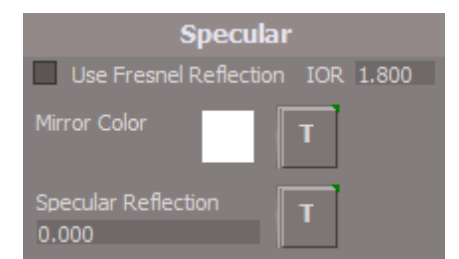
IOR - Index of Refraction. Controls the strength of the Fresnel effect.

Mirror Color - Mirror color multiplier

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Specular Reflection - Amount of specular reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings



Bump

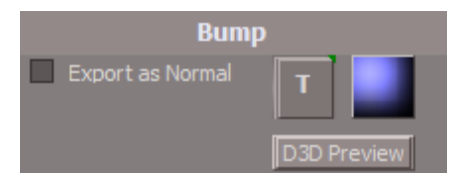
Export as Normal -

T button - LMB - Opens Texture Mapping /

RMB - Opens Settings

D3D Preview - Creates a Bump / Normal Map preview for the Workspace scene.

The preview has no effect on the final render.



YafaRay Shiny Diffuse

YafaRay Glossy

A glossy reflection means that tiny random bumps on the surface of the material cause the reflection to be blurry. In fact there is a wide range of materials with such a reflection. YafaRay glossy material can be useful for all kinds of finished surfaces such as plastics, polished metal, car paint, finished wood, lacquered surfaces, painted surfaces, varnished wood, glaze, organic materials, etc. The glossy effect can be reinforced by using a fine bump map, or by mapping glossy reflection with a fine texture.

Diffuse

Use Glossy Color for Diffuse - Enable Glossy color for Diffuse.

Diffuse Color - Diffuse color.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Diffuse Reflection - Amount of diffuse reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

[Common Material Settings](#)

Specular

Glossy Color - Glossy color multiplier.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Glossy Reflection - Amount of glossy reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Specular Exponent - Amount of blur in the glossy reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Use Anisotropic Specular - Enables Anisotropic Specular.

The Exponent value is divided into vertical and horizontal components. By using a different value for each component.

The reflection will take an anisotropic oval shape.

U Exponent - Amount horizontal reflection.

V Exponent - Amount vertical reflection.

Bump

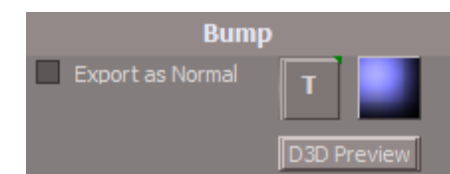
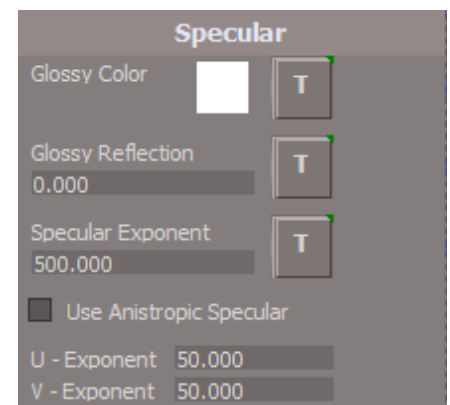
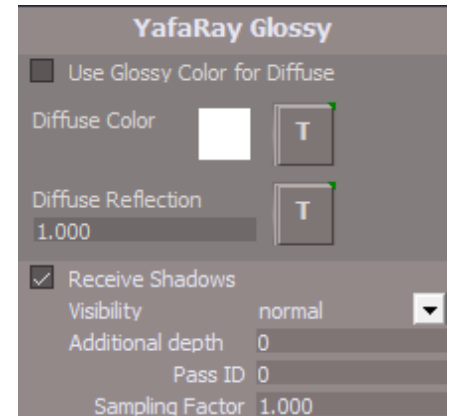
Export as Normal - Enable export as normal.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

D3D Preview - Creates a Bump / Normal Map D3D Preview.

The D3D Preview has no effect on the YafaRay render.

[YafaRay Glossy](#)



YafaRay Coated Glossy

Coated Glossy is basically a glossy material (see the previous section) with some kind of reflective coating layer on top. IOR is the setting that controls reflectivity of the coating top layer.

“Coated Glossy is a Glossy material with a transparent coating layer on top”

Diffuse

Use Glossy Color for Diffuse - Enable Glossy color for Diffuse.

Diffuse Color - Diffuse color.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Diffuse Reflection - Amount of diffuse reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Common Material Settings

Coated

Mirror Color - Mirror color multiplier.

Mirror Reflection - Amount of reflection.

Index of Refraction - Amount of reflection to the coated surface.

Specular

Glossy Color - Glossy color multiplier.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Glossy Reflection - Amount of glossy reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Specular Exponent - Amount of blur in the glossy reflection.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Use Anisotropic Specular - Enables Anisotropic Specular.

The Exponent value is divided into vertical and horizontal components. By using a different value for each component. The reflection will take an anisotropic oval shape.

U Exponent - Amount horizontal reflection.

V Exponent - Amount vertical reflection.

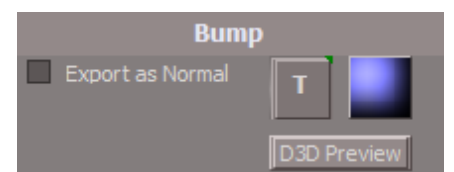
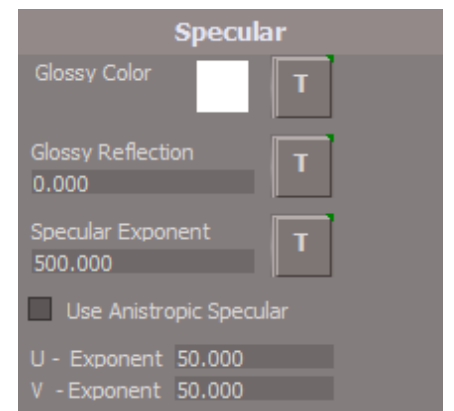
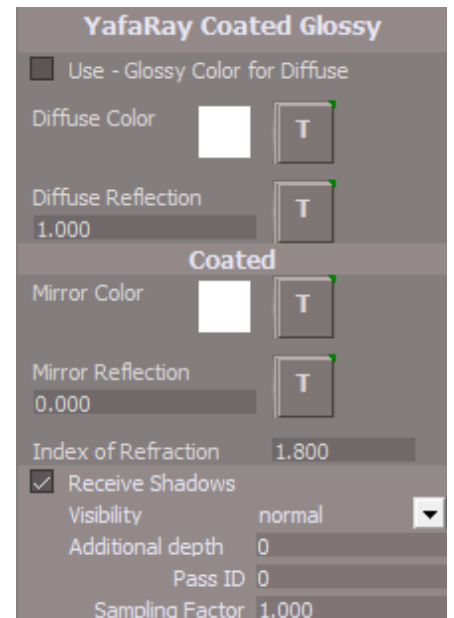
Bump

Export as Normal - Enable export as normal.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

D3D Preview - Creates a Bump / Normal Map D3D Preview.

The D3D Preview has no effect on the YafaRay render.



YafaRay Coated Glossy

YafaRay Glass

Glass is basically refraction, reflection and absorption of incoming light.

Real Glass

Use Absorption - Enables Absorption.

IOR - Index of Refraction. Controls the strength of the Fresnel effect.

Absorption Color - Absorption color.

Absorption Distance - Amount of distance of the absorption color.

Dispersion - Amount of dispersion of the separation of white light into different colors.

Fake Glass

Use Fake Shadows - Enables Fake Shadows.

Filter Color - Filter color.

Use instead of Absorption for uniform glass. Also needed to tint Transparent Shadows when Fake Shadows and Transparent Shadows are enabled.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Mirror Color - Color of Reflections.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Transmission Filter - Controls amount of tinting for light passing through the material.

1 = Blends with Absorption, if enabled.

0 = No blending with Absorption, if enabled.

Alpha strength - Amount of alpha displayed in the D3D Preview.

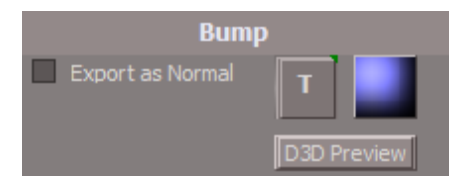
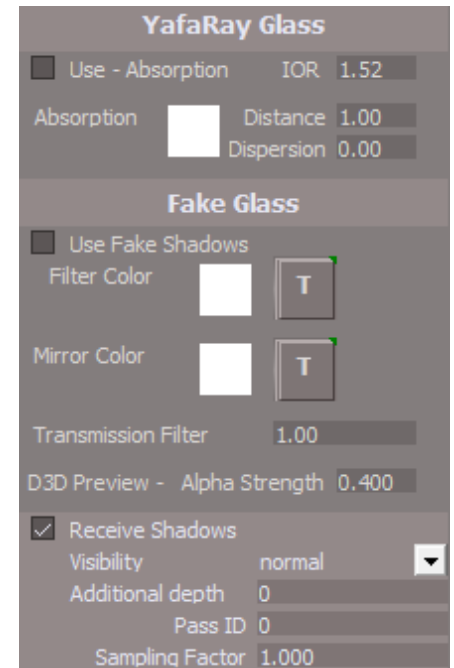
[Common Material Settings](#)

Bump

Export as Normal - Export as Normal verses Bump.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

D3D Preview - Creates a Bump / Normal Map D3D Preview.



[YafaRay Glass](#)

YafaRay Rough Glass

Real Glass

Use Absorption - Enables Absorption.

IOR - Index of Refraction. Controls the strength of the Fresnel effect.

Absorption Color - Absorption color.

Absorption Distance - Amount of distance of the absorption color.

Dispersion - Amount of dispersion of the separation of white light into different colors.

Exponent - Amount of exponent.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Fake Glass

Use Fake Shadows - Enables Fake Shadows.

Filter Color - Filter color.

Use instead of Absorption for uniform glass. Also needed to tint Transparent Shadows when Fake Shadows and Transparent Shadows are enabled.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Mirror Color - Color of Reflections.

T - LMB - Opens Texture Mapping / RMB - Opens Settings

Transmission Filter - Controls amount of tinting for light passing through the material.

1 = Blends with Absorption, if enabled.

0 = No blending with Absorption, if enabled.

Alpha strength - Amount of alpha displayed in the D3D Preview.

[Common Material Settings](#)

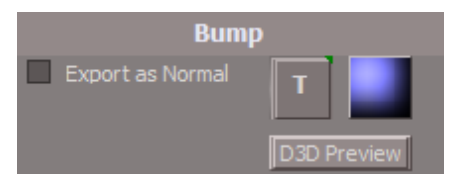
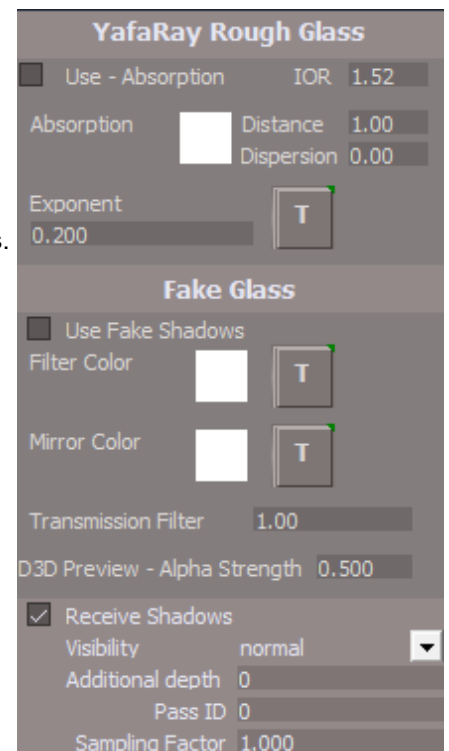
Bump

Export as Normal - Enable export as normal.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

D3D Preview - Creates a Bump / Normal Map D3D Preview.

The D3D Preview has no effect on the YafaRay render.



YafaRay Blend

takes two defined materials and mixes them into a third one.

Blend - Amount of blending between two materials.

T button - LMB - Opens Texture Mapping / RMB - Opens Settings

Controls the blend with a texture, this will override the Blend slider.

Select **Update D3D Preview**

Blend Material Collection - Opens the Blend Material Collection.

Update D3D Preview- Generates D3D Preview of the blended materials.

Update Material Lists - Updates the Material List 1 and 2 from the Blend Material Collection.

Material List 1 - Select the BlendMaterial# for the first material to be blended.

Material List 2 - Select the BlendMaterial# for the second material to be blended.

Blend Material Collection

Reset - Removes all of the spheres in the collection except for the first two original spheres.

Add Material - Adds a new sphere to the collection, selects it, activates the Inspect tool, and adds a BlendMaterial# to the Material combo control.

Select Material - Selects the BlendMaterial# in the present Material combo control and activates the Inspect tool.

BlendMaterial - Each material in the collection has a panel where you can enter a description of the material for further references.

C - LMB = Camera view of the collection. RMB = Previous view

X - LMB = Remove - Blend Material Collection from the scene

Adding a **YafaRay Blend** material to the **Blend Material Collection** is not supported!

Steps to apply a YafaRay Blend material

1. The easiest way to apply a **YafaRay Blend** material is to select your Object first.
2. Load the **YafaRay Blend** material from the library into the D3D Material Editor.
3. Select **Blend Material Collection**
This loads the required Blend Material Collection into the scene and selects BlendMaterial1.
4. Load a YafaRay material from the library into the D3D Material Editor.
BlendMaterial1 will be painted with your selected material or if needed use the Paint tool.
5. Right click another sphere in the collection and then left click with the Inspect tool.
6. Load a YafaRay material from the library and Paint the sphere if needed.
7. Using the Inspect tool, left click your object and select **Update D3D Preview**.
8. Adjust the amount of **Blend** between the two blended materials.
9. Right click in 3D Space to exit the Inspect tool.

You can also manually select a BlendMaterial# with the **Select Material** button.

Ensure that any sphere in the collection is not painted with a **YafaRay Blend** material.

Requirements: In order to use **YafaRay Blend** materials, the **Blend Material Collection** must be included with your scene.

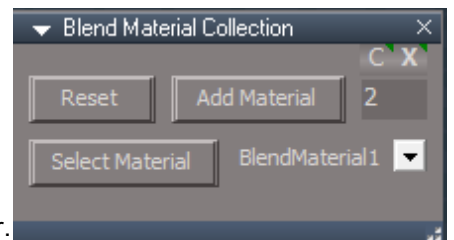
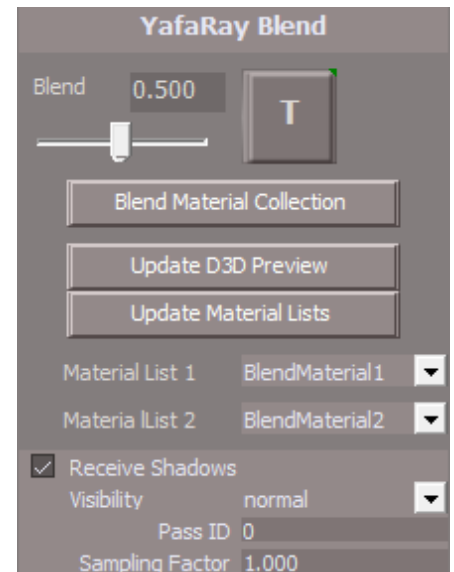
Only one Blend Material Collection is supported per scene.

You cannot rename the Blend Material Collection.

Using different **YafaRay Blend** materials for different objects, must be included in the Blend Material Collection.

The Blend Material Collection supports up to 25 materials.

The Blend Material Collection does not render and is completely transparent to the YafaRay render engine.



[YafaRay Blend Material](#)

YafaRay Light Material

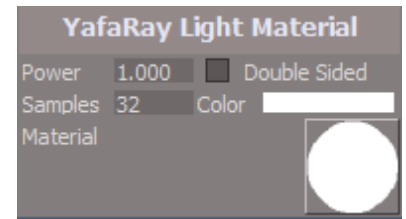
Objects in the scene can act as area light sources when this material is applied to them.

Power- Amount of the material color intensity.

Samples- Amount used to sample the Soft Shadow.

Double Sided - Enables the light on the backside of all faces.

Color- Material color.



[YafaRay Mesh Light](#)

YafaRay Portal Material

Objects in the scene can act as virtual windows that let background lighting into an enclosed space.
The light will come from the front faces of the mesh.

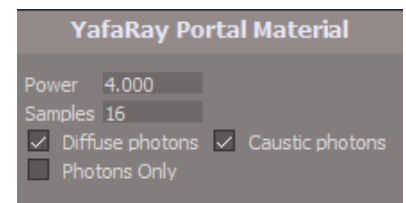
Power- intensity.

Samples- Amount used to sample the Soft Shadow.

Diffuse photons - .

Caustic photons -

Photons Only - .



Portals were added in YafaRay 0.1.2 and were never documented. Power may be an absolute value or a multiplier for the intensity of the background light. Diffuse and Caustic photons may enable independent from the background settings or may serve as filters for the corresponding background settings.

The following text was copied from the AMD Radeon ProRender web page indicated below.

Portals are intended to guide environment lighting in interior scenes. Typically placed in windows, doors or other relatively small openings, portals cast light into enclosed scenes from the outside environment.

Portals act as virtual windows and allow artists to specify the exact point where environment light should come from, instead of casting light over the entire scene. By sampling environment light more efficiently, portals can reduce the amount of noise with less samples per pixel required.

Note that portals let light through in only one direction, so the geometry normal should face inwards (towards the interior scene), similarly to a window that lets light into a room. Otherwise, portal light will not be rendered properly.

Portals sample lighting color from the environment light, either IBL or Sun & Sky. The intensity and other parameters of portal light can be adjusted using the environment lighting settings.

For YafaRay replace the word “environment” above with “background lighting”.
This may or may not be how YafaRay portals work.

https://radeon-pro.github.io/RadeonProRenderDocs/en/plugins/blender/portal_light.html

Texture Mapping

Gamma - Amount of Gamma for the Image Map

Attribute Name - Used for the Yafaray render engine

Image Use the File browse dialog button to choose an Image file

None - Removes Texture Mapping

Image - Enables the use of an Image

Clouds - Enables the use of a procedural Clouds

Marble - Enables the use of a procedural Marble

Wood - Enables the use of a procedural Wood

Voronoi - Enables the use of a procedural Voronoi

Switch - Generates the Texture Map

Or select the image to generate the Texture Map

Blend- Amount of blending between the Blend color and the Material color

Color - Blend and or Procedural texture color

X Offset - Texture Map U/X offset

Y Offset - Texture Map V/Y offset

Z Offset - Texture Map Z offset

X Scale - Texture Map U/X scale

Y Scale - Texture Map V/Y scale

Z Scale - Texture Map Z scale

Texture Coordinates - object mapping coordinates

Global - the texture uses the scene's Global 3D coordinates for mapping

UV - UV coordinates are used for texturing

Generated - the texture uses the object's local space.

Projection - shape of the projection, Use plain for UV mapping

plain
cube
tube
sphere

Negative - produces a negative of the texture.

NoRGB - Converts a texture into a gradient, the two extremes of the gradient scale being Material main color and color set in Color Swatch.

Blend Mode

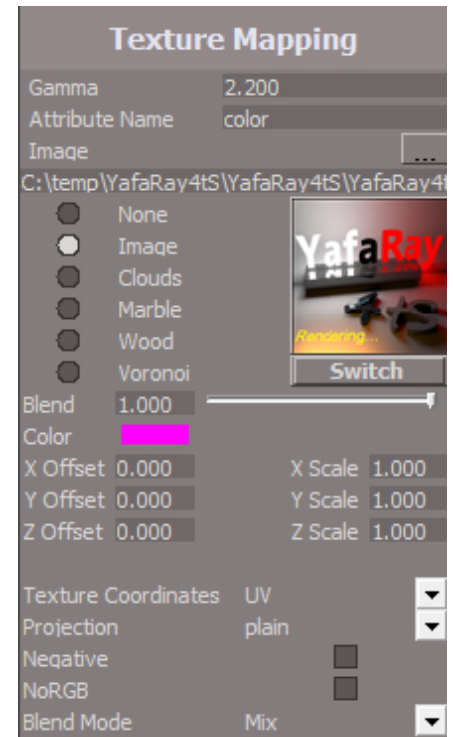
Add
Darken
Difference
Lighten
Mix
Multiply
Overlay
Screen
Subtract

Note about: The YafaRay material's **T** button

LMB - Opens this Texture Mapping panel where you can enable one of the above options

RMB - Opens Settings for any assigned Procedural - Texture Map

There is no Settings for None or Image



YafaRay Texture Mapping

YafaRay4tS Procedurals

Image Cloud

- Color** - Enable Color Noise.
- Depth** - Amount of Noise detail.
- Hard** - Soft / Hard Noise strength, changes contrast and sharpness.
- Size** - Amount of Noise size.
- X Size** - Amount of Pixels in Width
- Y Size** - Amount of Pixels in Height

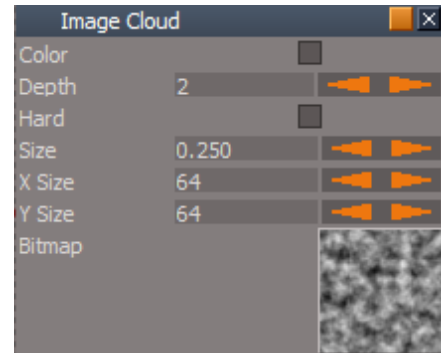


Image Marble

- Depth** - Amount of Noise detail.
- Hard** - Soft / Hard Noise strength.
- Shape** - shape of the wave used to produce the veins:
 - Sin
 - Saw
 - Triangle
- Sharpness** - settings for soft to more clearly defined Marble.:
 - Soft .
 - Sharp.
 - Sharper.
- Size** - Amount of Noise size.
- Turbulence** - Amount of turbulence in the veins.
- X Size** - Amount of Pixels in Width.
- Y Size** - Amount of Pixels in Height.

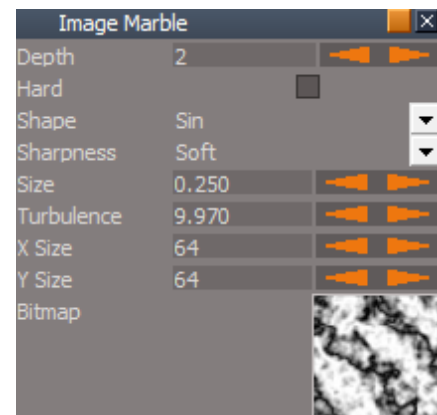


Image Wood

Hard - Soft / Hard Noise strength.

Shape - noise basis, shape of the wave:

Sin.

Saw.

Triangle.

Size - Amount of Noise size.

Turbulence - Amount of turbulence noise for bands or rings.

Wood Type - band types, straight or ring-shaped, with or without turbulence:

Band Noise - straight with Noise.

Band - straight without noise.

Ring Noise - Use Rings with Noise.

Ring - Use Rings without noise.

X Size - Amount of Pixels in Width.

Y Size - Amount of Pixels in Height.

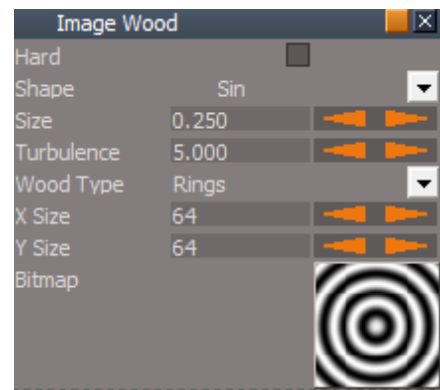


Image Voronoi

Color Type - methods to calculate color and intensity:

Intensity - Intensity only.

Position - Position only.

Position and Outline - Position and Outline only.

Position, Outline, and Intensity - All three types.

Distance Metric - the algorithm used to find the distance between cells:

ActualDistance

Chebychev

Distance Squared

Manhattan

Minovsky 1/ 2

Minovsky 4

Intensity - Amount of intensity applied to the image.

Size - Amount of Cell size.

Weight 1 - Amount of distance between each cell based on the distance metric.

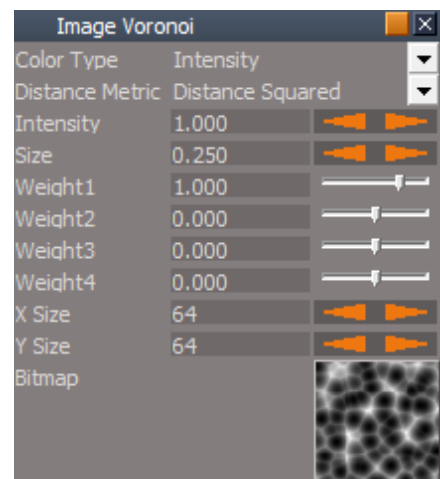
Weight 2 - Amount of distance between each cell based on the distance metric.

Weight 3 - Amount of distance between each cell based on the distance metric.

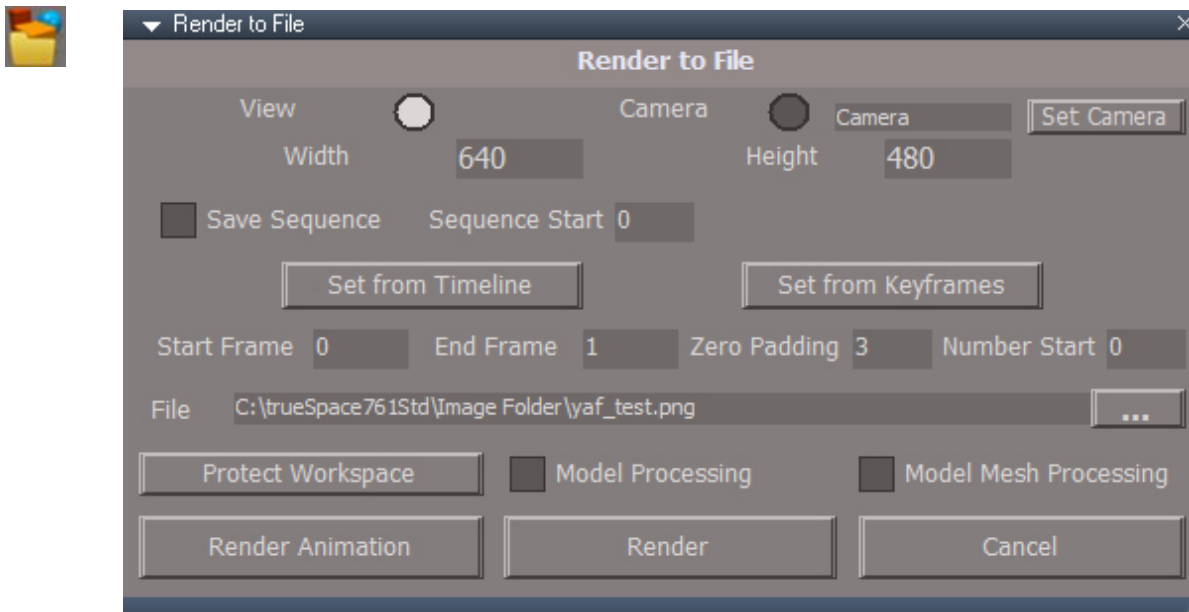
Weight 4 - Amount of distance between each cell based on the distance metric.

X Size - Amount of Pixels in Width.

Y Size - Amount of Pixels in Height.



Render to File



View - render the Workspace view.

Camera - render the set Camera view.

Set Camera - set the selected camera as the render camera and switch to the Camera render option

Width - The width of the image rendered.

Height - The height of the image rendered.

Save Sequence - This will let you render repeated images, saving them to a new file name each time without the need to manually type in a new name.

Sequence Start - the number to be appended to the file name. This number increments after each render.

Set From Timeline - Sets the Start and End frames from the scene's Start and Stop frames.

Set From Keyframes - Sets the Start and End frames from the scene's Keyframes or the selected object in Object Render mode.

Start Frame - Frame to start rendering animation.

End Frame - Last animation frame to render.

Zero Padding - Number of leading zeros to use when padding the number for the file name.

Number Start - Number start with for file sequence.

File - name for rendered image output. This is where the rendered results will be saved.

Protect Workspace -Opens Protect Workspace

Model Processing - Render animations from an opened Model view

Model Mesh Processing - Renders Model objects mesh animations: NURBS, Metaballs, and Deformations

Open Output Folder - Opens the folder entered into the above path.

Render Animation - Exports the XML files for the frame range specified in **Start Frame** to **End Frame** and spawns the YafaRay renderer to render the frames sequentially in the background. After the images are rendered, the generated XML files are deleted..

Render - Exports XML file and spawns the YafaRay render process.

[Protect Workspace and Model Processing](#)

Render Passes

The screenshot shows the 'Render Pass' window with the following sections and options:

- Enable:** A list of passes with checkboxes and dropdown menus. The 'Enable' checkbox is checked.

AO	disabled	▼
Color	disabled	●
Z Depth	disabled	▼
Diffuse Color	disabled	●
Diffuse Direct	disabled	●
Diffuse Indirect	disabled	●
Diffuse	disabled	●
Emit	emit	●
Environment	env	●
Glossy Color	disabled	●
Glossy Direct	disabled	●
Gloss Indirect	disabled	●
Index Material	disabled	●
Index Object	disabled	●
Indirect	disabled	●
Mist	disabled	●
Normal	disabled	●
Reflection	reflect	●
Refraction	disabled	●
Shadow	shadow	●
Specular	disabled	●
Subsurf Color	disabled	●
Subsurf Direct	disabled	●
Subsurf Indirect	disabled	●
Trans Color	disabled	●
Trans Direct	disabled	●
Trans Indirect	disabled	●
UV	disabled	●
Vector	disabled	●
- Misc:**
 - Disable Active
 - Z-Depth (absolute)
 - Z-Depth (normalized)
 - Ambient Occlusion
 - Ambient Occlusion (dav)
- Basic:**
 - Combined standard image
 - Diffuse materials
 - Diffuse materials (no shadows)
 - Shadows
 - Environmental light
 - Indirect light (all)
 - Objects emitting light
 - Reflections (all)
 - Refractions (all)
 - Mist
 - Toon
- Advanced:**
 - Reflections (perfect only)
 - Refractions (perfect only)
 - Photon Radiance map
 - Volume Transmittance
 - Volume integration
 - Diffuse Indirect light
 - Diffuse color
 - Glossy materials
 - Glossy Indirect light
 - Glossy color
 - Transmission materials
 - Transmission Indirect light
 - Transmission color
 - SubSurface materials
 - SubSurface Indirect light
 - SubSurface color
 - Indirect light
 - Surface Integration
- Indexed:**
 - Object (absolute)
 - Object (normalized)
 - Object (auto. color)
 - Object Mask
 - Object Mask Shadow
 - Object Mask All (Object+Shadow)
 - Material (absolute)
 - Material (normalized)
 - Material (auto. color)
 - Material Mask
 - Material Mask Shadow
 - Material Mask All (Object+Shadow)
 - Object (auto. absolute)
 - Material (auto. absolute)
- Debug:**
 - AA sample count
 - UV coordinates
 - shading dSdV
 - shading dSdU
 - surface dPdV
 - surface dPdU
 - surface NV
 - surface NU
 - Normals (geometric)
 - Normals (smooth)
 - Light Estimation (Dirac)
 - Light Estimation (light sampling)
 - Light Estimation (material sampling)
 - Wireframe
 - Faces Edges
 - Objects Edges
 - Sampling Factor
 - differential dP lengths
 - differential dPdx X.Y.Z
 - differential dPdv X.Y.Z
 - differential dPdx+dPdv X.Y.Z
 - differential dUdx, dVdx
 - differential dUdv, dVdv
 - differential dUdx+dUdv, dVdx+dVdv
- Masking:**
 - mask obj index 0
 - mask mat index 0
 - mask invert
 - mask only
- Toon and Object Edge Passes:**
 - Toon Edge Color
 - Object Edge Thickness 2
 - Object Edge Smoothness 0.750
 - Object Edge Threshold 0.300
 - Toon Pre Smooth 3.000
 - Toon Quantization 0.100
 - Toon Post Smooth 3.000
- Faces Edge Pass:**
 - Faces Edge Thickness 1
 - Faces Edge Smoothness 0.500
 - Faces Edge Threshold 0.010
- Buttons:**
 - Disable All
 - Multi Layer EXR

Passes can be used to split rendered images into colors, direct and indirect light to edit them individually, and also to extract data such as depth or normals.

Enable by pressing the button in the Render Pass panel or use the Render Settings Render Pass checkbox.

The Active Pass will have the indicator lit next to it. Push any of the non-green buttons to set the value for the selected render slot. Use the green buttons to set the default render slot values.

Disable Active will disable the selected render pass slot.

Disable All will disable all the render pass slots

Multi Layer EXR - make an exr file with render passes as custom layers instead of separate images. This option is only valid when rendering EXR format files.

AO and Depth passes are hard coded to use certain values:

AO - ao, ao-clay

Depth - z-depth-norm, z-depth-abs - z depth normalized and absolute.

Green buttons will fill in the default slots for their corresponding value. Gray button values can be placed in any slot by selecting the slot first.

The file names for the pass images will use the text values assigned to each slot.

Blender Passes

Basic Toon effect, Object Edges and Faces Edges passes were added in YafaRay v3.1.0
Debug passes were added in YafaRay v.3.0.0

Diffuse and Diffuse Direct have the same default of "diffuse".

Feature changes/additions in v3.1.0:

* New Render Passes: Basic Toon effect, Object Edges and Faces Edges. See: <http://www.yafaray.org/community/forum/viewtopic.php?f=23&t=5181>

"Wireframe" material options and render pass will be calculated at "material" integration level. It should be more finely detailed but will only show triangles (quads will show the "crossing" line).

"Faces edges" will be a render pass calculated at Film level showing the edge contours. In this case, quads will be shown more correctly. However, to calculate the faces edges with the current architecture I had to use indirect methods that are way less precise, so some artifacts and missing or incomplete edges are to be expected, including aliasing in the edges. I've added some parameters that can be accessed in the Render Passes tab for users to fine tune the edges generation as much as possible.

"Object edges" will be the same, but only rendering object edges and contour, more useful for toon-like renders, for example. Limitations are the same as with the Faces Edges.

"Toon" render pass: as I already got the above working, I thought it could be nice to work a bit more and get a full "toon-like" Render Pass. This render pass will take the original image, apply some smoothing and color quantization to make the image more "cartoon-like" and add the Object Edge. The users will be able to choose the edge color, adjust a bit the thickness and smoothing/quantization. This will be only a *very basic* toon render pass, don't expect a perfect contouring, etc!! I didn't even try making an animation yet, I suppose there will some edges changing from one frame to the next, not sure if it will be distracting or not...

Changes from v3.0.0-beta to v3.0.1-beta:

* Render passes: added new debug passes for diagnosing light estimation problems

<https://github.com/YafaRay/libYafaRay/blob/master/CHANGELOG.md>

"Ability to AutoSave image files. Either at the end of each pass or using a user-configurable time interval."

?at end of each pass?

"The Passes are especially intended for Direct Light and Photon Mapping integrators."

"Debug passes and UV debug pass available to be able to find mesh/mapping/texturing problems at the same time as rendering the scene."

Beta Releases

YafaRay4tS version: 0.9.9

Tuesday, December 24, 2019

Add Model view animations to the render
 Render simple non-compiled D3D shaders as Glossy materials
 Internal viewer tif display support via external plugin Tif Loader
 Works with the latest Unofficial Update lights
 Incorporated the YafaRay4tS Scene Utilities
 Render Displays update
 YafaRay materials UI update

YafaRay4tS version: 0.9.0

Wednesday, July 11, 2018

Uses YafaRay v3.3.0
 Updated D3D preview to more closely match the rendered result
 New integrated render buttons
 Updated materials with texture maps for all compatible attributes
 Added blend values for texture maps
 Updated draw parameters
 New blend material
 New procedural texture maps - clouds, marble, voronoi and wood
 New YafaRay camera
 Updated IES lights
 Now works with standard trueSpace lights
 Enhanced light color picker
 New toolbar buttons for YafaRay camera, smoothing, volume primitive
 Sphere light exports scale instead of the size attributes
 Constant default color matches tS default background color
 New support for resizable iOptDisplay window not limited by resolution or image aspect ratio
 iOptDisplay
 New animation preview system
 New option to turn off caustic photons and diffuse photons for each light source.
 New background cast shadows option and background sun shadow option.
 New smart blur value for image based lighting
 New photon map saving and loading
 Additional rays on materials
 Russian roulette for path tracing
 New Denoise option

YafaRay4tS version: 0.8.0

Sunday, Jan 31, 2016

Partial save timer - save file while rendering to see progress
 Tile rendering options - linear or random for bucket style renders
 Custom text for the Draw PARAM's option
 New material options are at the bottom of the materials
 Pass ID is used with the render passes
 Visibility can be set to normal, shadow only, no shadows, invisible
 Receive Shadows uncheck so material does not get shadows

Threads default to -1

Render Passes

Check "enable" to turn on render passes

Use the dropdown to select render passes

RenderPassList.txt contains a list of all possible passes that can be typed into any slot. The channel isn't limited to the dropdown list selections. The

RenderPassList.txt can be found in the trueSpace directory.

The Multi-Layer option at the bottom only applies to the exr file format YafaRay 0.1.2 Beta support:

YafaRay4tS version: 0.7.5

Sunday, July 24, 2011

trueSpace 7.61 version required and is not backwards compatible.

Improved skeletal meshes/Actors with animation support.

Skeletal meshes and Characters, will export if you apply SDS to the mesh. The first Level of SDS is the preferred method unless the mesh is already subdivided.

Skeletal meshes will also export if you apply a morph to the character. Apply morph then right click to immediately exit the tool.

Support for multiple materials on one mesh.

Fixed mesh normals for better glass objects.

Spotlight and Omni light power exports the same as Blender with a export power = power^2 .

Area and Sphere lights have a render option to make them visible.

Area light has a new mesh so when the mesh is at (0, 0, 0) the resulting light is also at (0, 0, 0).

Adjusted light attenuation parameters to make the preview more closely match the render.

Does not lose camera selection if the scene name changes.

Glass material absorption value was not connected so value was never used.

Added a strength control to the glass material to control the D3D transparency preview (no effect on the final render).

Bump map preview for materials.

Changed the default render parameters to match Blender's UI values.

YafaRay4tS materials default to the corresponding Blender material default values.

Added a global input gamma that is applied to colors, lights and textures to translate them to linear color space used by YafaRay.

Gamma value does not affect the display in trueSpace 3D viewport.

Added DarkTide's sun sky background option.

Added support for rendering to the OpenEXR file format (exr).

New aspects for each Lighting Method.

YafaRay4tS Settings button shows the YafaRa4tS panel's presently used Lighting Method aspect in the Stack.

YafaRay4tS Export and Render button no longer shows the YafaRa4tS panel in the Stack with the LMB.

YafaRay4tS Export and Render button shows the YafaRa4tS panel's presently used Lighting Method aspect in the Stack with the RMB.

Diffuse Reflect Map fixed in new improved Yaf Coated Glossy and Yaf Glossy materials.

New improved YafaRay4tS Spot light with Hotspot generator.

Updated YafaRay4tS Help file.

New tS7.61 YafaRay4tS Installer script.

YafaRay 0.1.2 Beta support:

Requires YafaRay version 0.1.2 beta to be setup with YafaRay4tSv0.7.5 and the YafaRay 0.1.2 xml format - beta checkbox enabled, located in the Setup aspect.

Only one version of YafaRay can be installed at one time.

New file formats hdr, jpg, png and tif.

Save Alpha located in the Lighting Method aspects. - Exports an alpha file in addition to the rgb output file.

Z - Channel option works.

Z - Channel option works.

New Volume Region mesh: Uniform and Height Fog work with the YafaRay Volume.RsObj

Support for normal map textures.

Rough Glass material.

Photon only and soft shadow parameters for the Spot light.

IES Light with preview.

SPPM lighting method (not working at this time for the xml renderer, YafaRay version 0.1.2-Beta2).

YafaRay4tS version: 0.7.0

Thursday, June 11, 2009

trueSpace 7.61 version required and is not backwards compatible.

Animation rendering is now supported. Support is included for sequential image batch rendering to occur in the background while you continue working inside trueSpace.

YafaRay4tS version: 0.6.1

Tuesday, May 5, 2009

Setup directories now handled correctly, and YafaRay4tS will guess YafaRay install location if not found at location specified.

Texture handling fixed. This fixes the mirror color texture bug for Shiny Diffuse material

TGA Viewer app added

internal viewer panel added

Support for custom external viewer added.

Lights, Materials, setup objects moved into separate libraries.

Light objects changed to quadratic falloff and the export values adjusted accordingly.

Scripts added to Area and Sphere light objects to have size affect visual display brightness.

Gamma scripting for real time texture display in materials now adjusts relative render target value.

Help file added.

Fixed a bug with Glass Material absorption toggle not working. Also added option for absorption dist. of 0.0 to set logarithmic absorption.

Yaf(a)Ray4tS version: 0.6.0

Saturday, February 14, 2009

Full geometry support with UV mapping

Support for all YafaRay light types.

HDRI, IBL, and background shader support

Photon mapping, Caustics, GI, and Final Gather

Fog

Multi-threaded rendering

Mapped versions of the following YafaRay materials:

Glossy

Coated Glossy

Shiny Diffuse

Glass

Rendering from View or Camera

Limitations:

This current version of Yaf(a)Ray4tS doesn't support Skinned (Actor/Skeleton) objects.

Fog currently is non-functional.

Animation is not supported.

Multiple materials on a single object are not supported at this time

YafaRay Release Notes:

<https://github.com/YafaRay/libYafaRay/blob/master/CHANGELOG.md>

New Update - Clinton Reese @Clintons 3D Creations has single handedly brought the newest version of YafaRay v3.3.0 to YafaRay4tSv0.9.9 for trueSpace 7.61 and trueSpace 7.61 Standalone.

Almost all of the code has been revamped making it more efficient and fixed several items that were not working properly. He has developed a D3D Preview that closely matches YafaRay rendered results for Workspace's D3D real time view. All of the Background types and Materials, including his newly developed Blend, Texture Map, and Procedurals materials, are created with just a few clicks of a D3D Preview button. He has integrated YafaRay4tS into Workspace's Offline Renderer. Be sure to read the Beta Releases in the History page for all of the improvements and additions.