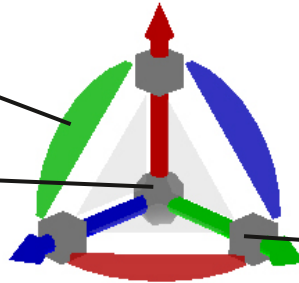


Point Edit Navigation Controls

LB to rotate about the selection center
RB to rotate about the Axis

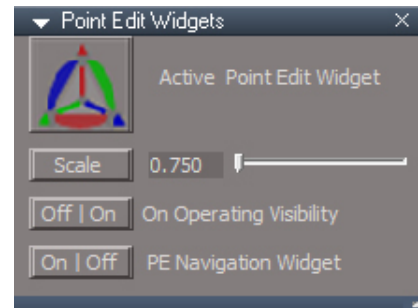
LB + Drag - Moves selected element in X and Y
MB + Drag - Moves the widget
Ctrl + LB click - Opens the Point Edit Widget's Preferences



Alt + MB click toggle the Object Scale widget

Bars, Triangles, Cubes and Arcs

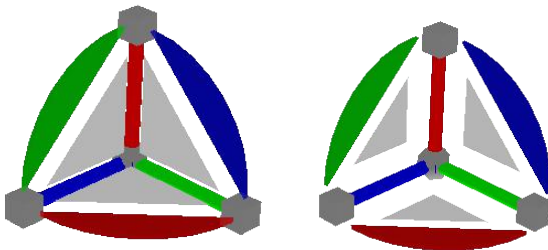
Ctrl + LB click opens their Mouse settings
P + LB click sets the Axis to the selected Face, Edge, or Vertex
P + RB click moves and rotates the Axis to the selected Face
P + MB click moves the Axis to object center and rotates the Axis to the selected Face
Period + move - Hides UnSelected elements
Comma + move - UnHides All elements
O + LB click Toggles - Mesh Object Coordinate Mode



Scale - resize the widget
On Operating Visibility -
On = can see the widget element while dragging
Off = widget invisible while dragging

Shift + LB click in empty 3D Space deactivates Object widgets - Move, Rotate, Scale

Shift + LB click any surface = switch to other Point Edit Widgets

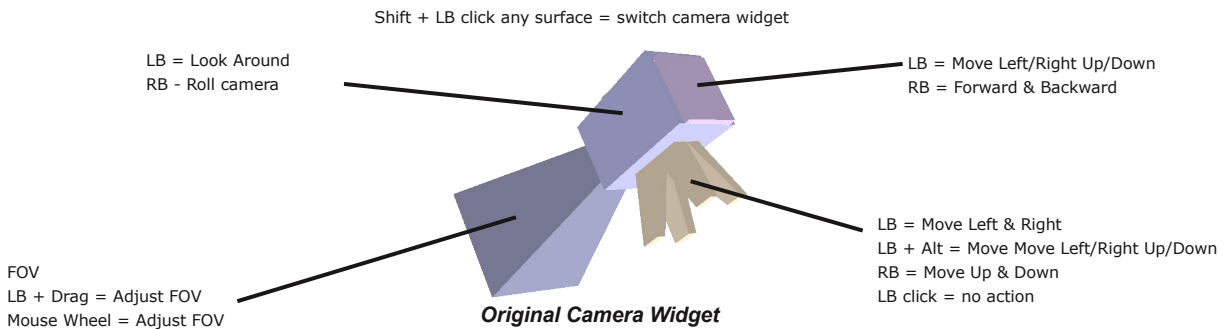
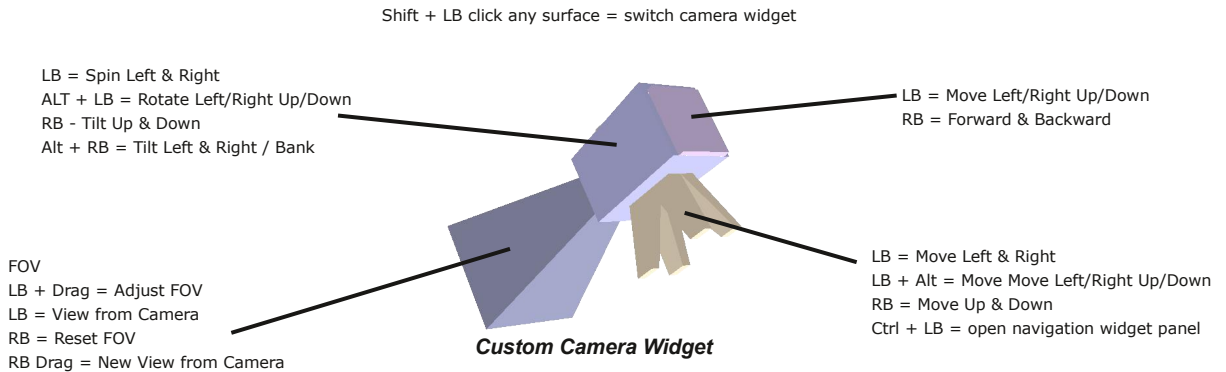


i + drag any surface = Opens the widget's Additional Shortcuts Help floating panel

pe and nav widget preferences/settings - On Operating Visible on/off clears undo history and only effects the active widget

CTRL SPACE = Point Edit Widget Toolbar

Camera Controls



Background Controls

b + i + mouse move = help

Wheel - Move view In and Out

Shift + Wheel - Zoom (FOV) and Move view In and Out

Ctrl + Shift + MB Drag - Zoom view (FOV)

MB Drag - Rotate view around selection or scene center if no selection

Ctrl + MB Drag - Move view up down left and right in screen space

Shift + MB Drag - Look around

Ctrl + MB Click - Look At Selection

MB DbClick - Look at and fill the view with the current object selection or Point Edit selection

Shift + MB Click - Moves the view to show all objects in the scene

Comma + LB Drag - Shows All hidden items

Period + LB Drag - Hides All Except the selected items

Default Context Controls

ALT + LB - Select Locked objects

Esc + move - Unselect

CTRL SHIFT V = View Toolbar

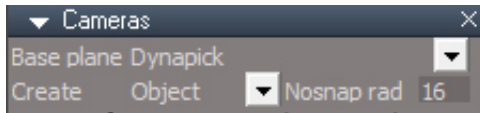
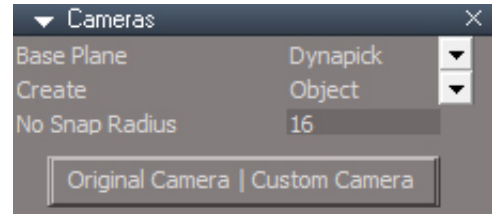
3D Window Shortcuts

Key	Description
CTRL SHIFT V	View Toolbar
CTRL SHIFT O	Object Navigation Toolbar
DELETE	Delete selected object
CTRL K	Delete selected object
CTRL I	Inspect Material
CTRL R	Render to file
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first encapsulated object
UP	Select object encapsulator
Z	Start Move tool
X	Start Rotate tool
C	Start Scale tool
NUMPAD7	Rotate Yaw
NUMPAD9	Rotate Yaw
NUMPAD1	Rotate Roll
NUMPAD3	Rotate Roll
NUMPAD0	Rotate Pitch
DECIMAL	Rotate Pitch
CTRL NUMPAD7	Rotate Yaw
CTRL NUMPAD9	Rotate Yaw
CTRL NUMPAD1	Rotate Roll
CTRL NUMPAD3	Rotate Roll
CTRL NUMPAD0	Rotate Pitch
CTRL DECIMAL	Rotate Pitch
NUMPAD5	Normalize Rotation

Shortcuts Runner(Move/Rotate) details

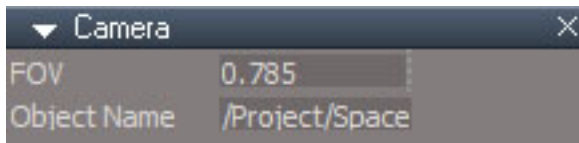
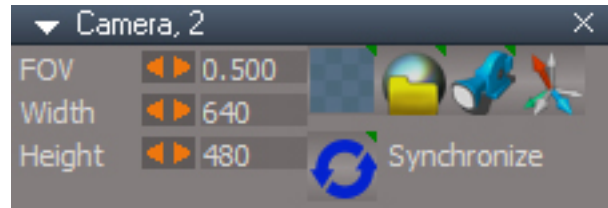
 [More Information](#) 

NUMPAD8	Move
NUMPAD4	Move
NUMPAD6	Move
NUMPAD2	Move
CTRL NUMPAD8	Move
CTRL NUMPAD4	Move
CTRL NUMPAD6	Move
CTRL NUMPAD2	Move
PAGEUP	Move
PAGEDOWN	Move
CTRL PAGEUP	Move
CTRL PAGEDOWN	Move
HOME	Normalize Location
A	Camera Move tool
S	Camera Rotate tool
D	Camera Fov tool
SHIFT X	X lock
SHIFT Y	Y lock
SHIFT Z	Z lock
F1	World Coordinates
F2	Object Coordinates
F3	Screen Coordinates
F4	Tangent Coordinates

**Cameras creation panel****Unofficial Update Cameras creation panel**

No Snap Radius - sets a radius where snapping cannot occur when creating primitives with snapping enabled. To override and force snapping press the ALT key. *This setting does not seem to be working.*

Original | Custom - toggle creation of the full custom unofficial update camera or an original trueSpace camera. Look at the status line after pressing the button to see which type of camera will be created.

**Camera panel (original trueSpace)****Unofficial Update Camera panel**

Camera - Create a camera in the scene facing in the negative Y direction. The camera has a FOV of 0.785 by default.

The Unofficial Update version of the camera has extra buttons and controls and the Object Name is not shown in the panel.

The camera FOV units are in radians and is measured in the vertical direction by default. trueSpace default of 0.785 radians is about 45 degrees, that translates to 22.5 up and 22.5 down.

Chapter 5 SURFACING - Workspace

5.1 UV Projections

5.2 UV Editor

navigation information missing from the original manual

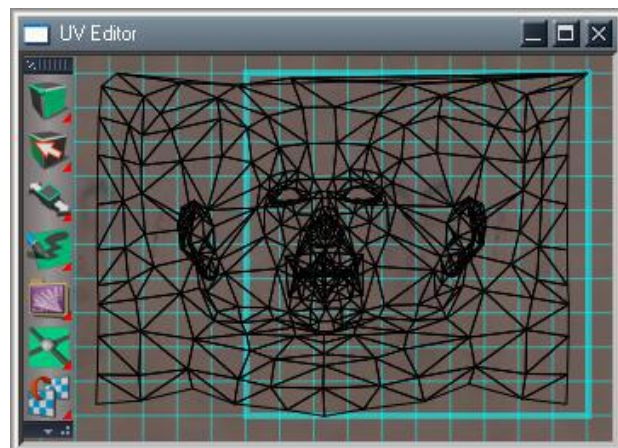
alt + RDrag zoom

MMB click or alt + LMB click, zoom all

5.2.1 UV Mapping Editor Tools



UV Mapping Editor



UV Mapping Editor



Unofficial Update UV Mapping Toolbar



Hide selected geometry.



Select by material



Hide unselected geometry.



Show all hidden geometry



Material editor



UV Editor preferences



LMB Next Material, RMB Previous Material



Undo



Redo

5.2.3 Mesh Tools



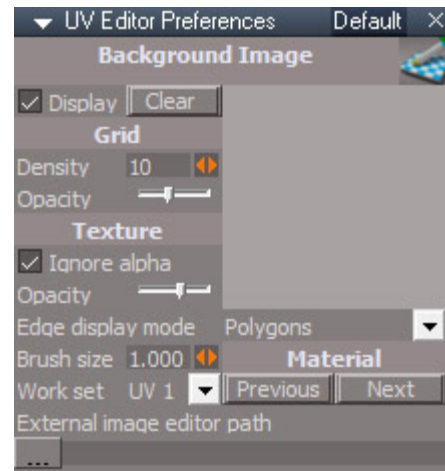
Flatten Selected UV Coordinates

This tool will not run on a triangulated mesh. At least 1 face must have more than 3 vertices. The reason for the added limitation is that running this tool on a triangulated mesh will crash trueSpace.

5.2.5 UV Mapping Editor Options



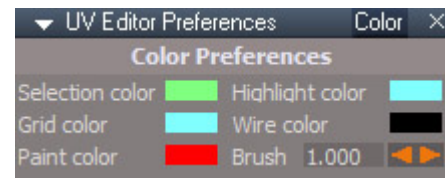
Default Aspect



Unofficial Update Default Aspect



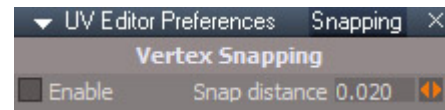
Color Aspect



Unofficial Update Color Aspect



Export Aspect



Snapping Aspect



LMB open the uv editor, RMB open preferences in a floating window

Vertex Snapping – when Enabled moving any element will snap it's vertices to other points in the UV map.

5.3 Workspace Material Editor

Extra Material Tools



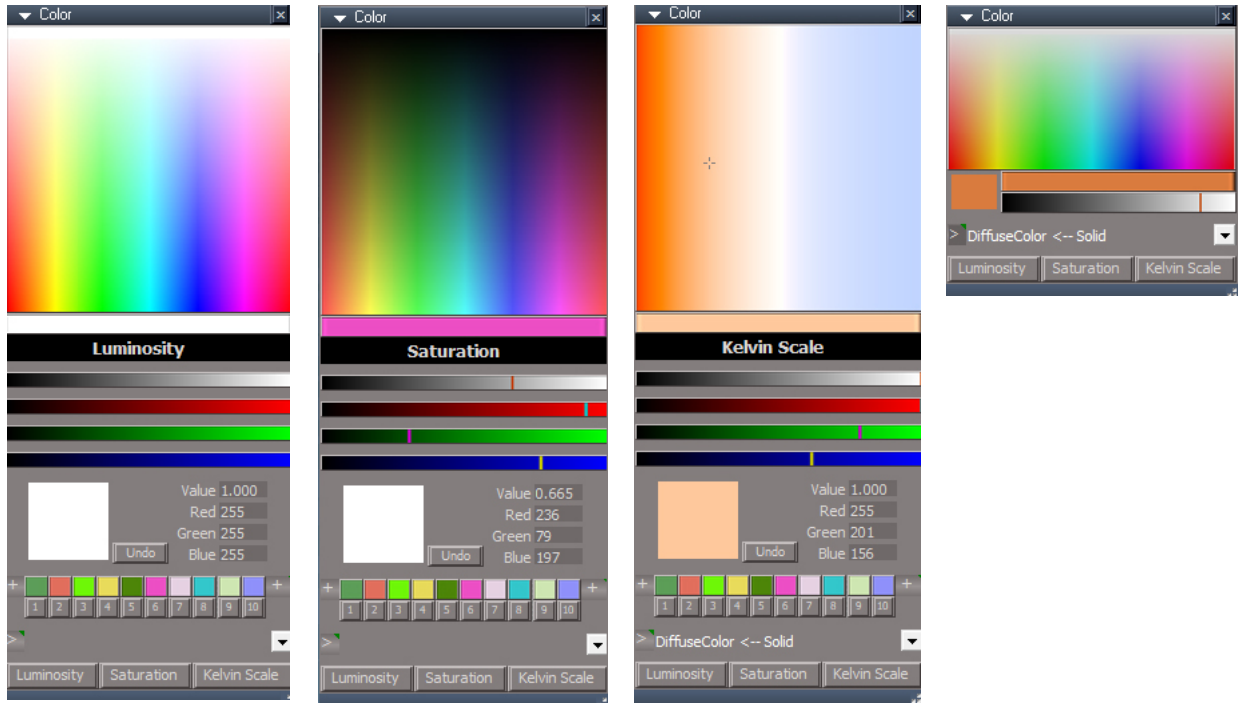
Color Picker



Vertex Color Paint



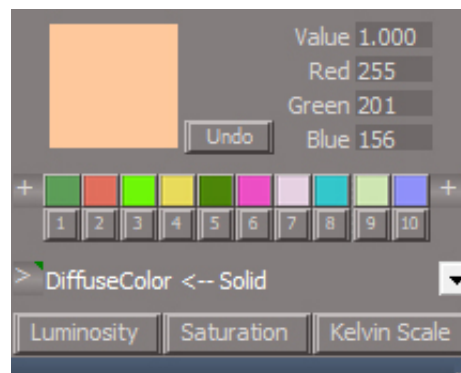
Color Picker



click or drag in the color controls to change the color of the selected attribute on the selected object

The color bar below the main color input is read only and indicates the current color while dragging

The gray, red, green and blue bars are slider controls for their respective channels. The gray bars controls luminosity and saturation values.



Undo - allows a only a single undo to run. Use the normal undo button to undo color changes.

Value, Red, Green and Blue inputs are read only and do not change the color value

Click on the color swatches to assign a preset color to the object attribute. Click on the numbers to assign the current color to the corresponding swatch. Press the "+" buttons to randomize the color swatch values.

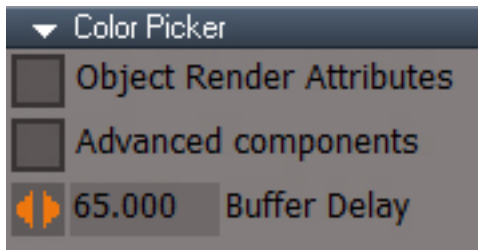
> - LMB switch between the large and small color picker panels. RMB open the link editor to the node that has the selected color attribute

The drop down contains a list of all the color attributes of the selected object. With default options there is usually only one or two items in the list

Luminosity - Color Picker (HSL) – Hue horizontal, saturation vertical, luminance slider

Saturation - Color Picker (HSB) – Hue horizontal, brightness vertical, saturation slider

Kelvin - Color Picker (Kelvin) – color temperature scale horizontal, vertical has no physical meaning, brightness slider.



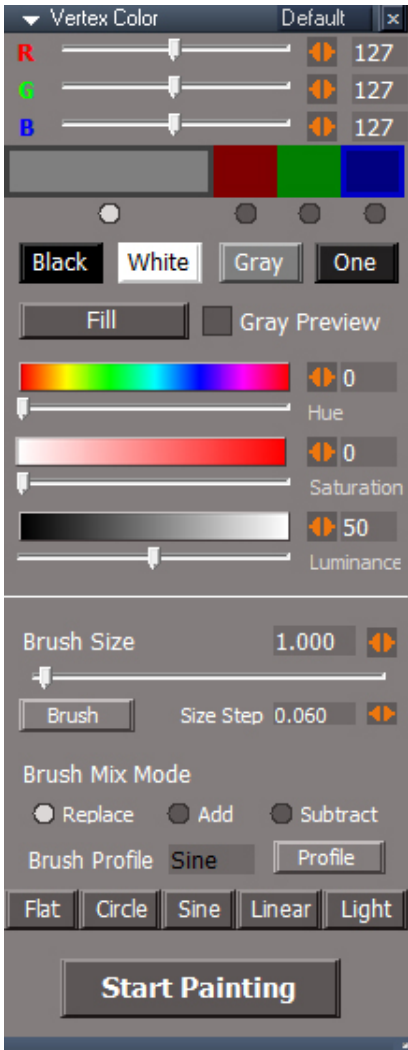
Object Render Attributes - include the render attributes points, edges and overlay colors

Advanced components - will show all color attributes including those that do not contribute to the material

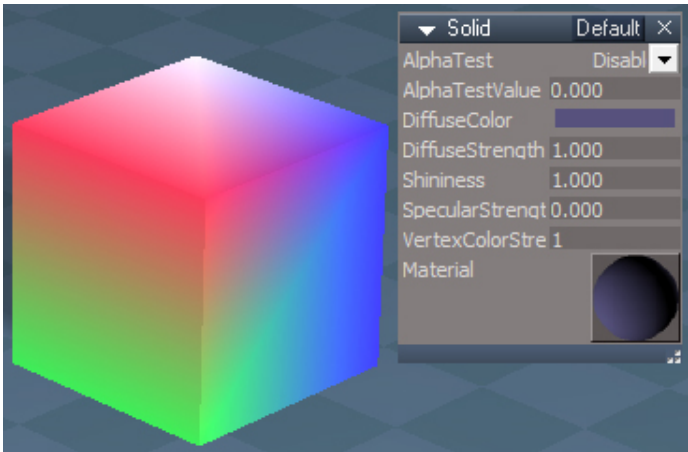
Buffer Delay - controls the speed of the color picker, lower values are faster and less reliable for undos



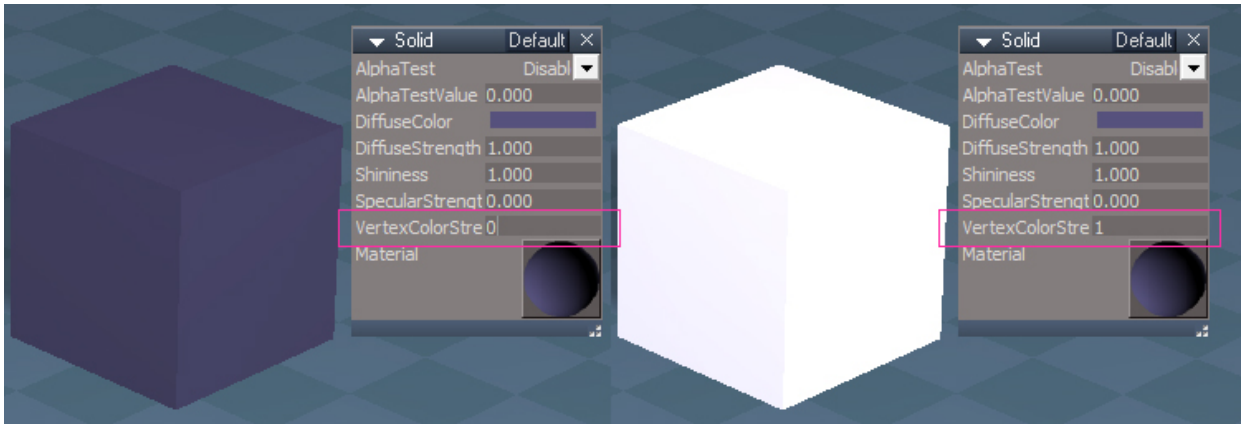
Vertex Color Paint



Vertex Color Panel



Vertex Colors



Solid color material with 0 vertex color strength (left) and 1 vertex color strength

The first step is to assign a material that uses vertex colors.

The only compiled material with access to vertex colors is the default solid color material. This can be assigned by RMB reset on the Material Editor sphere.

To see the vertex colors increase the value of the "VertexColorStrength". The "DiffuseColor" can be darker to increase the vertex color effect or black to see only the effect of the vertex colors.

R G B - set red, green and blue values.

radio buttons and color indicators for selection of full color paint or red, green or blue only.

Black, White, Gray or One(1,1,1) Preset Colors - Black, White, Gray or very dark color values.

Fill - fill the selected object with the current color. This fill button only works when the brush is inactive.

Use the **"F"** key fill shortcut when the brush widget is active.

Gray Preview - when painting in single color mode only the selected color channel will show and it will show as a grayscale display.

Hue Saturation Luminance - set HSL color values.

Brush Size - size of the paint brush in local coordinates of the mesh. The brush size can also be controlled by RDrag up and down over the mesh object.

Brush - open the Vertex Color Brush panel

Size Step - amount to change the brush size with each press of the toolbar button.

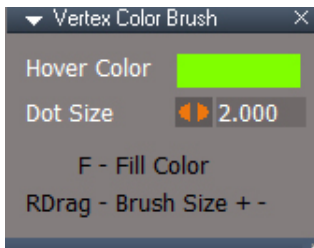
Brush Mix Mode - **Replace**, **Add** and **Subtract**. The color fills quickly so use very small (dark) color values should be used for Add and Subtract modes.

Brush Profile - shape of the brush effect Flat, Circle, Sine, Linear and Light.

Profile - open the brush profile panel

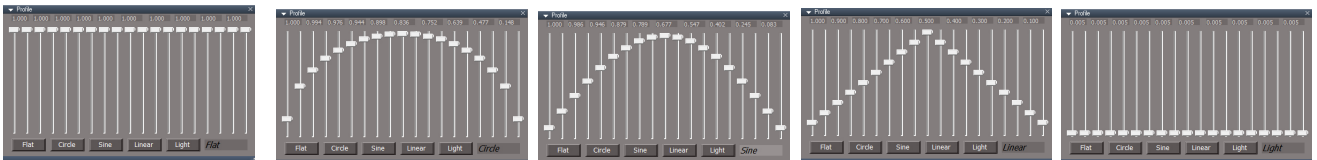
A custom profile can be created in the Profile aspect panel.

Start Painting - begin the paint process. The first item you paint on will be the object to receive the colors. If the object does not have any vertex colors, a black color will be assigned to all the vertices of the mesh.



Hover Color - color of the dots showing the brush size.
Dot Size - size of the brush dots hover effect.

Widget controls are set before invoking the paint tool.



Brush Profile Preset shapes - Flat, Circle, Sine, Linear, Light

The Light profile can be used with the Brush Mix Modes of Add and Subtract.

The sliders work in pairs to define a custom profile for the brush. The numbers left to right are the center to outside values.

Bone Weights - press to assign random vertex colors based on the influence of each bone in an actor.

Set Vertex Colors based on UV values:

Axis - the direction to create a vertex color gradient. U direction, V direction or both U and V directions

Channel - read values from UV channel 1 or 2.

U Color - color channel to use in the U direction gradient red, green or blue.

V Color - color channel to use in the V direction gradient red, green or blue.

UV - press to create the vertex colors on the selected mesh object.

Set Vertex Colors based on Bitmap color values:

Channel - read values from UV channel 1 or 2.

Node - full path to the node that has the bitmap data connector.

Get Source Node - copy the selected node path to this input and guess the bitmap connector to use.

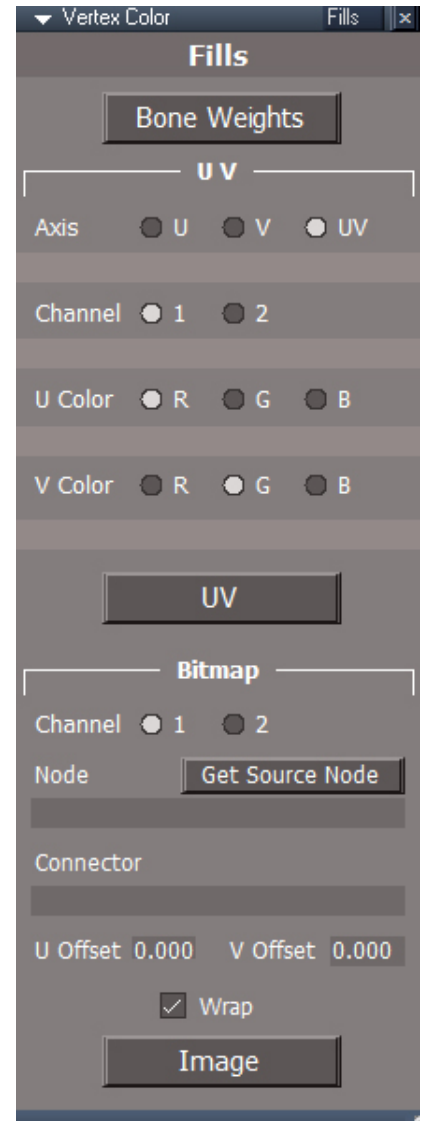
Connector - the node connector that has the bitmap data.

U Offset - sample the bitmap using an offset in the u direction.

V Offset - sample the bitmap using an offset in the V direction.

Wrap - wrap the uv values to the 0 - 1 space. When false the u and v values will be clamped to the 0 - 1 uv space.

Image - press to copy the bitmap image colors into the mesh vertices



Vertex Color Notes:

Editing a mesh can remove vertex colors. Once vertex colors are assigned do not add any new geometry to a mesh.

Set Mesh Editor Settings Autotriangulation to "None" before reshaping a mesh that has vertex colors.

The vertex colors can be fed into the vertex shader nodes position, normal and tangent inputs. The normal and tangent values are normalized when retrieved. Meaning something like a very dark red would be normalized to the brightest red value. Pure white would normalize down to a medium gray.

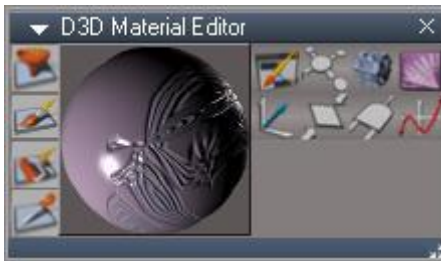
Vertex colors are not available in the constant shader. The normalized colors can be accessed by piping the color into the normal or tangent, but these values would be normalized.

Vertex colors are not available in any of the compiled texture materials.

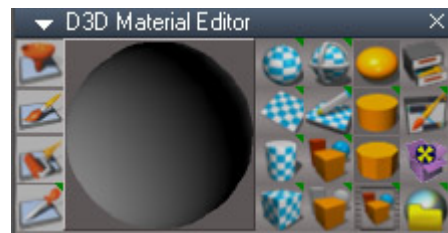
Vertex colors only work with D3D renders. It does not work with Lightworks, V-Ray or YafaRay renderers.

D3D Material Editor

Basic Painting Tools:



Material Editor



Unofficial Update Material Editor



Spherical UV Projection



Planar UV Projection



Cylindrical UV Projection



Cubic UV Projection



Shrink Wrap UV Projection



UV Editor



Render Scene



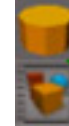
Render Object



Smooth Normals



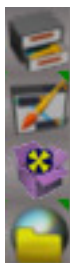
Autofacet Normals



Facet Normals



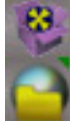
Render Animation



Update Library Places



Edit DX Material in Link Editor



Convert Direct3D Materials



Render to File

-  **Inspect:** Right-click Edit DX Material in the link editor.

Right click same as the left click Edit DX Material in Link Editor button above.

Left-click on any face using a particular material you want to make active in Material Editor.

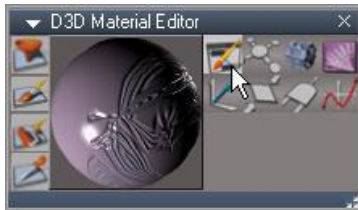
Left-drag to select an object

Right-drag to open the selected material in the link editor and exit the inspect tool

Shift + move mouse to open the scene in the link editor

Advanced Editing Tools:

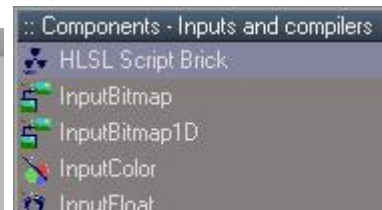
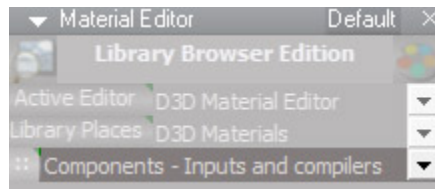
- DX Edit.



Edit DX Materials in the Link Editor

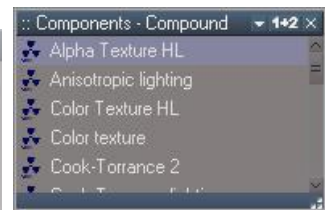
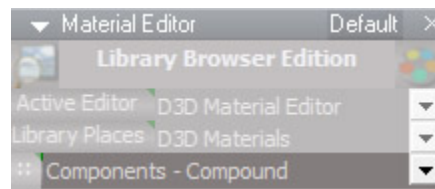
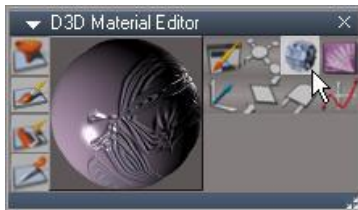


- DX Components Inputs and Compilers.



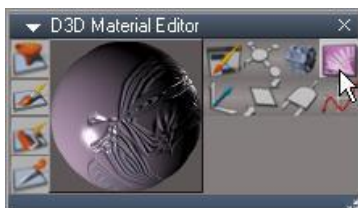
Opens DX Components Inputs and Compilers bricks library

- DX Components Compound.



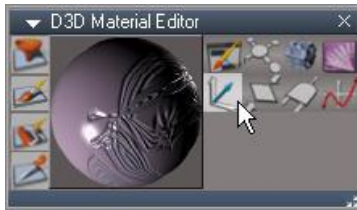
Opens DX Components Compound bricks library

- DX Components Texturing.



Opens DX Components Texturing bricks library

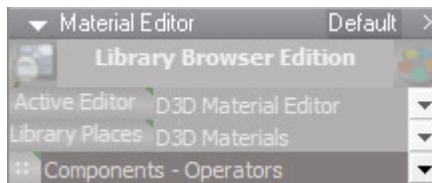
- DX Components Vectors.



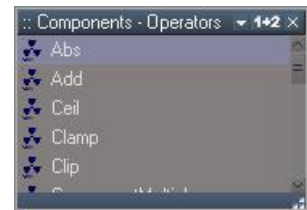
Opens DX Components Vectors bricks library



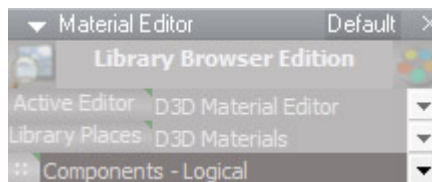
- DX Components Operators.



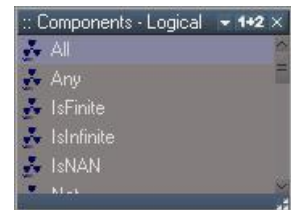
Opens DX Components Operators bricks library



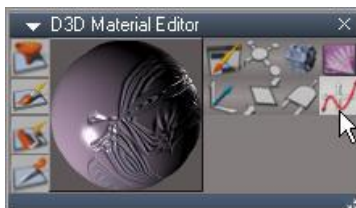
- DX Components Logic.



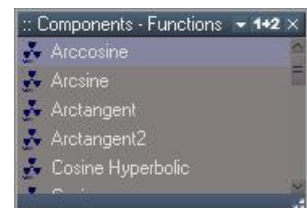
Opens DX Components Logic bricks library



- DX Components Functions.



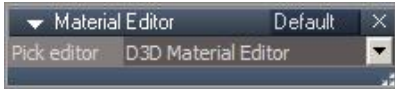
Opens DX Components Functions bricks library



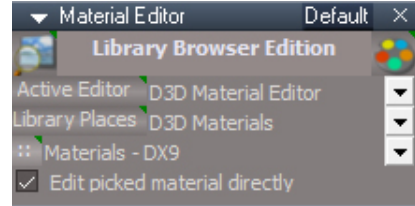
[link to dx toolbar popups here](#)

Material Editor Settings:

- Default Aspect:



Default Aspect



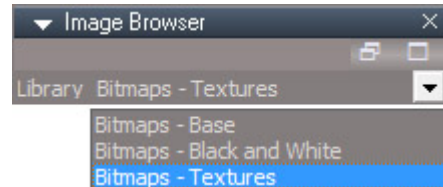
Unofficial Update Default Aspect



Image Browser – open image browser. Open a library by selecting one of the options in the dropdown.



Material Editor – re opens the D3D Material Editor which disappears when opening other preference panels in the Stack/Panel



Active Editor button – RClick reset - This fixes a bug in tS where the Vray Material Editor can disappear from the list

Active Editor - pick editor

Library Places button(LClick) – will load a predefined list of libraries and set ::, the chosen library, to "Materials - DX9" if "D3D Materials" is the selected value. If "D3D Materials" is not the selected value then it will load a list of library folders from the selected library place.

Library Places button(RClick) – selects "D3D Materials" and adds any open library places to the list. "D3D Materials" is not a true library place, but is a reference to a filtered list of the default trueSpace libraries.

Library Places – the contents of the chosen library place will be used to populate the Library Selection list(::).

Library Selection – drop down list of libraries, click to select and load a library.

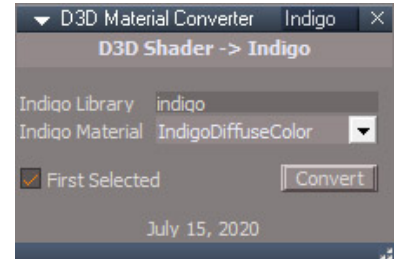
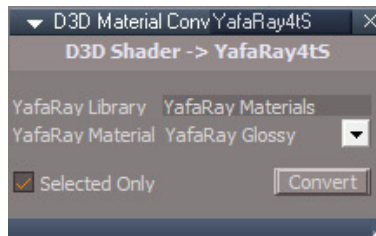
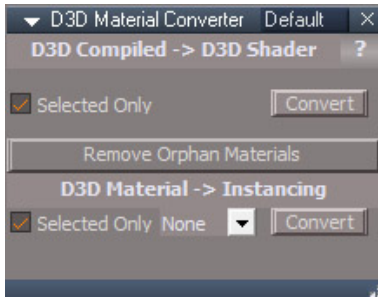


"D3D Materials" is not a true library place, but is a reference to a filtered list of the default trueSpace libraries.

You will need to Update the Library Places after resetting the Default Context or adding Libraries or Library Place(s)

:: – LMB opens the first panel frame and RMB opens the second panel frame. By default these are 2D and 1+2 aspect panels. If the panel is already open then a second LMB will save the first panel and RMB will save the second panel. The aspect frame's current Location, Height, Thumbnail size and the aspect (2D, 1D, 1+2) will be saved.

The tooltip says "2D Aspect / 1D 2D Aspect", but it really loads whatever aspect the user saved.



D3D Material Converter:

D3D Compiled → D3D Shader – converts materials from a closed compiled(base object) format to an open(compound object) shader node based style. This is useful as a first step in converting compiled or lightworks materials from modelside to Yafaray or Indigo materials.

D3D Material → Instancing - Converts to the 3 styles of workspace material instancing: None, Object and Scene.

D3D Shader → YafaRay4tS – converts a shader style material to a Yafaray material. Choose the type of Yafaray material from the drop down list. "YafaRay Library" is the name of the folder that contains the Yafaray materials within the Main Library Place, Rs Main Libraries.

D3D Shader → Indigo – converts a shader style material to an Indigo material. Choose the type of Indigo material from the drop down list. "Indigo Library" is the name of the folder that contains the Indigo materials within the Main Library Place, Rs Main Libraries. Indigo materials use scene instancing and this script will not convert "object" or "none" type instanced materials.

Selected Only option is to convert selected objects only, otherwise all objects in the scene are converted. Indigo conversion only works with a single selected item.

To convert a scene instanced base material to compound D3D, Yafaray or Indigo for a selected object:

- 1.Set the material editor to edit picked materials
- 2.Pick the material on the object and edit it in the link editor
- 3.Select the material node
- 4.Run the conversion

Remove Orphan Materials -If a mesh has multiple materials applied to it and the Separate Selection tool is used all the materials are copied which can result in orphan material nodes and connections. Run this tool to remove all the orphans in a scene. This tool does not convert materials



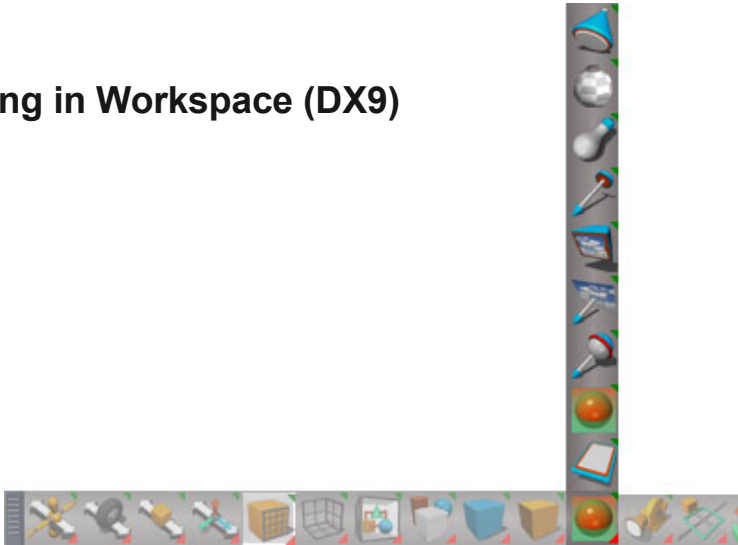
may be unreliable when used with instanced materials



all functions will erase undo history

Chapter7 Lighting and Rendering

7.1 Lighting in Workspace (DX9)



Common Settings and Functions

No Falloff button – preset Linear=0, Quadratic=0

Linear Falloff button – preset Linear=0.05, Quadratic=0

Inverse Square button – preset Linear=0, Quadratic=0.05

The presets have no effect on the Constant attenuation value. Mathematically it should have a value that is not zero when Linear and Quadratic are both zero.

Intensity – top scrubber range has values 1.0 and up

Saturation – bottom scrubber range has values from 0.0 to 1.0

Intensity and Saturation are mutually exclusive controls. Only use one or the other.

Preferences – open the preferences panel for the light

Synchronize – when active sends information across the bridge when the color or matrix values change also when attenuation and some other values change.

Color Picker – open the color picker small aspect

7.1.1 Real-time Light Types

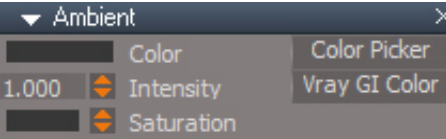


Ambient light Ambient light provides equal lighting conditions for every pixel of the scene.



- **Color** – Controls the color (and intensity) of the light.

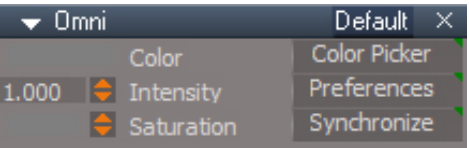
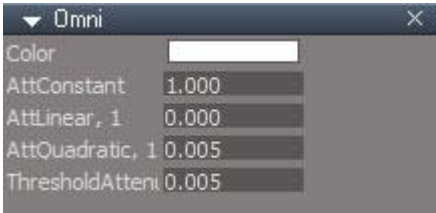
Vray GI Color – copy the color of the light to the vray environment color and activate the global illumination



Unofficial Update Ambient Light



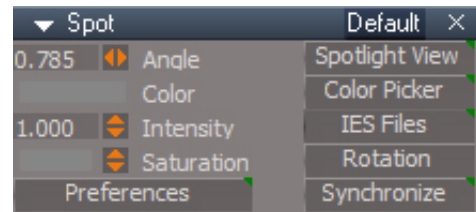
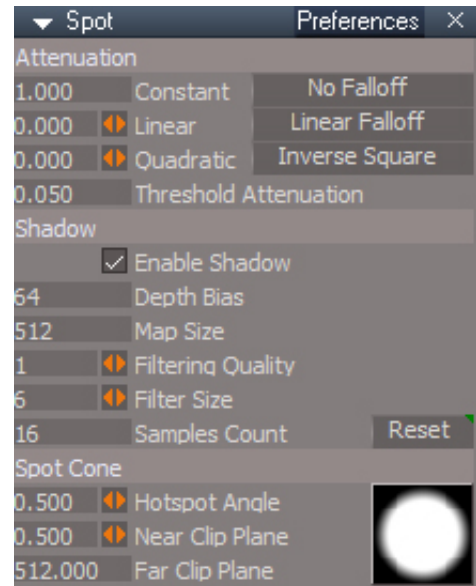
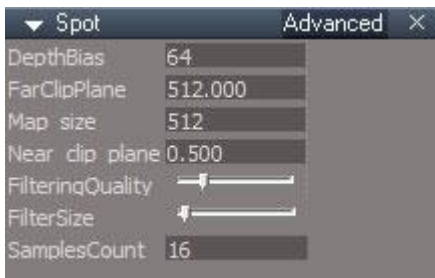
Omnidirectional light



Unofficial Update Omni Light



Spotlight



Unofficial Update Spot Light

Select the light and then ctrl + right click on it to open a floating panel.

Reset - resets Attenuation and Shadow values. RClick resets the values under the Spot Cone section

Rotation – sets the X rotation to -180 degrees and Y and Z to 0 degrees, light is facing downward with the top of the image in the negative X direction.

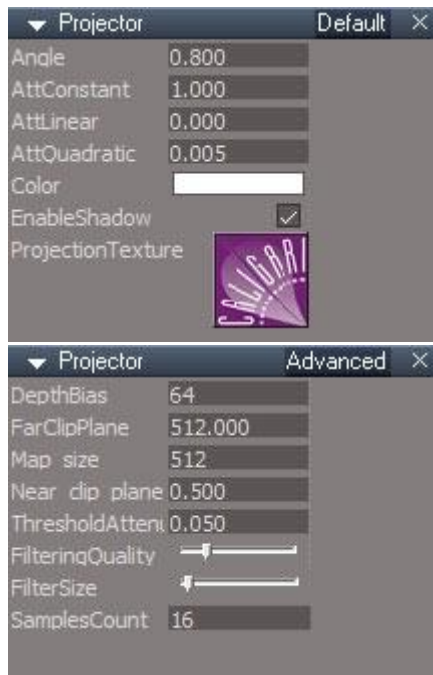
Synchronize – responds to extra information unique to the light type in addition to the standard color and matrix changes.

IES – opens the Convert Spot to IES panel [More Information](#)

Spotlight View – LMB will set the main 3D window to a spotlight view. RMB open a new 3D view from the spotlight.



Projector light



Reset - resets Attenuation and Shadow values. RClick resets the values under the Spot Cone section

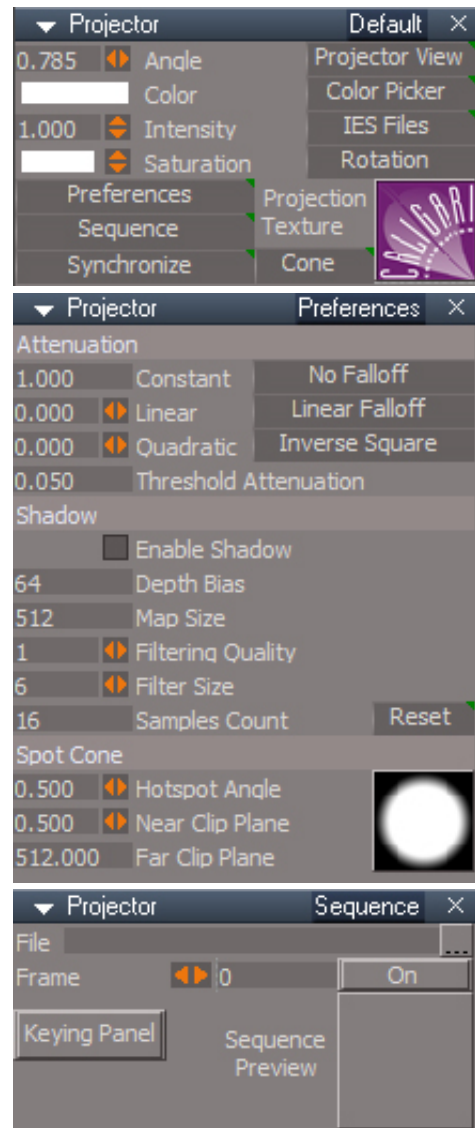
Reset Rotation – sets the X rotation to -180 degrees and Y and Z to 0 degrees, light is facing downward with the top of the image in the negative X direction.

Synchronize – responds to extra information unique to the light type in addition to the standard color and matrix changes.

IES – opens the Convert Spot to IES panel [More Information](#)

Projector View – LMB will set the main 3D window to a projector light view. RMB open a new 3D view from the projector light.

Cone – switch the projection between a square and circular shape. LMB=Cone, RMB=Square



Unofficial Update Projector Light

File – choose a set of image files to be played back by selecting 1 image in the sequence.

Frame – current frame number for the image sequence. The Frame value can be animated in the timeline.

On – activates the image sequence

Keying Panel– open keying panel



Directional light

▼ Directional

Default

×

Size15.000

Color

AttConstant1.000

AttLinear, 10.000

AttQuadratic, 10.005

ThresholdAttenu0.050

EnableShadow☒

▼ Directional

Advanced

×

DepthBias64

FarClipPlane512.000

Map size512

Near clip plane0.500

FilteringQuality

FilterSize

SamplesCount16

▼ Directional

Preferences

×

Attenuation

1.000ConstantNo Falloff

0.000LinearLinear Falloff

0.000QuadraticInverse Square

0.050Threshold Attenuation

Shadow

☒ Enable Shadow

64Depth Bias

512.000Far Clip Plane

512Map Size

1Filtering Quality

6Filter Size

0.500Near Clip Plane

16Samples Count

▼ Directional

Default

×

ColorColor Picker

1.000IntensityPreferences

SaturationSynchronize

15.000Light Beam Diameter

Unofficial Update Directional Light

Synchronize – responds to extra information unique to the light type in addition to the standard color and matrix changes.

Light Beam Diameter – renamed from “Size” in the original light, is the width of the circular beam



Infinite light

▼ Infinite

×

Color

▼ Infinite

×

ColorColor Picker

1.000IntensityVray Shadow

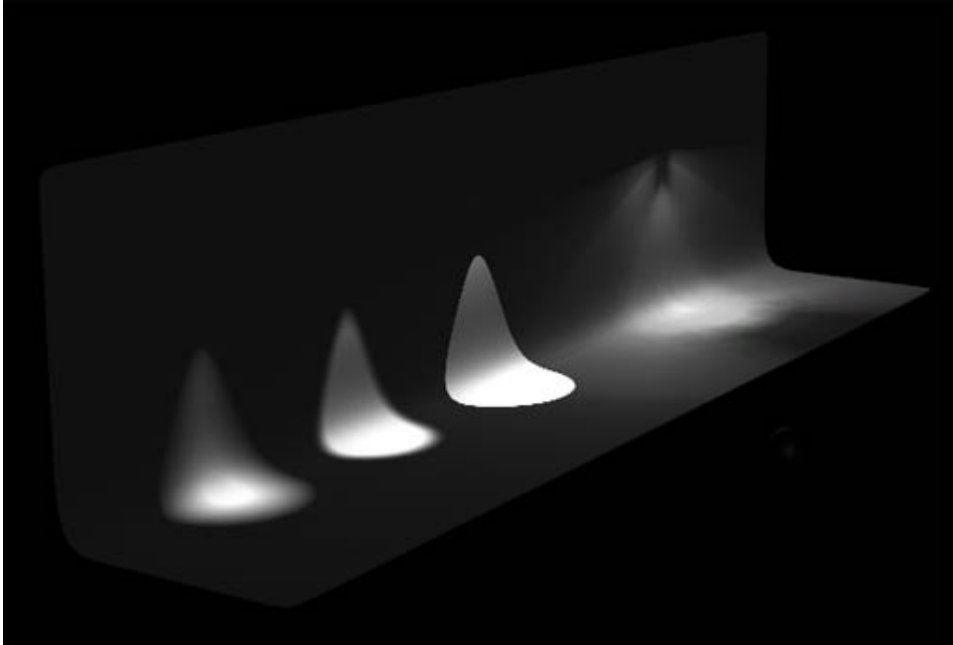
SaturationSynchronize

Unofficial Update Infinite Light



IES Profile / Spot Cone

Alter spot and projector lights in workspace to give the appearance of a light defined by an IES file. RMB set general falloff for default spotlights so the hotspot angle will have an effect in the 3D viewport.



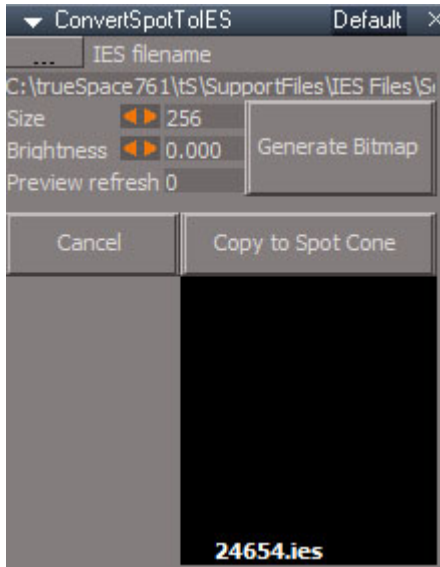
from left to right - soft/small hotspot, truespace default, hard/large hotspot, ies profile light

Both the IES Profile and Spot Cone alter the mask used by a spotlight that gives the light its circular shape. The Spot Cone alters the mask so that the spotlight angle and hotspot angle are used to generate the mask. This mask only effects how the spotlight looks in a D3D viewport.

The IES Profile works the same way in that it takes the lighting data defined by a real world light and applies it to the spotlight mask. The limitation is that the IES file defines how bright the light is and the mask just applies a 256 level image to the mask, so it replicates the general look but not the actual brightness of the light definition and results in a dimmer looking light. The IES file is read directly by the YafaRay renderer to generate IES lights for the render. It does not use the mask so there is no loss of brightness data.

IES files generally come in 2 flavors, 180 and 360 degrees. The 180 fills light in a hemisphere shape and the 360 fills light in a full sphere shape. The preview generated is compatible with 180 degree type of file. The angle for the spotlight is maxed out to match the 180 degree file defined by the IES light.

 truespace bug: in the 3D viewport under some circumstances spot lights will shine in 2 directions instead of 1 when shadow is enabled, a workaround is to turn off hardware shadow filtering.



Select a spotlight or projector light in the scene and press the IES button to open the panel.

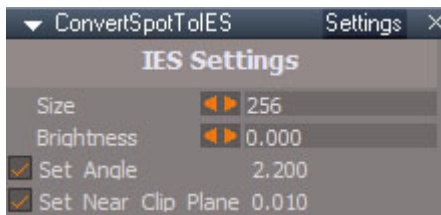
Push the **IES filename(...)** button to choose an IES file

Set value for the **Size** of one side of the square image mask in pixels

Brightness increase the brightness of the image (1 = twice as bright)

Press the **Generate Bitmap** button to create the mask image

Select one or more spotlights and press **Copy to Spot Cone** to apply the mask profile to the selected spotlight(s)



Size - same as Default aspect

Brightness - same as Default aspect

Set Angle – when checked the spotlight angle will be set to 180 degrees to match the IES light definition.

When unchecked the profile will be compressed compared to the real world light.

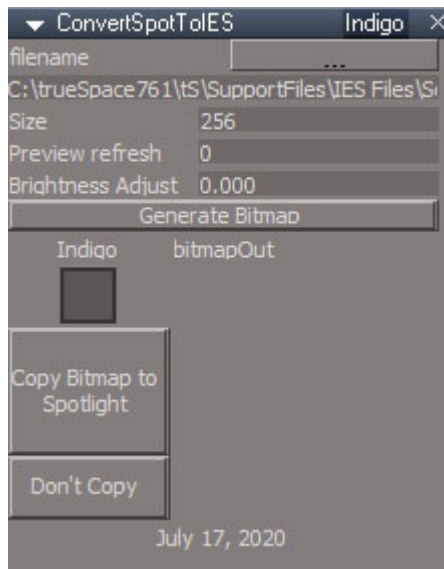
Set Near Clip Plane – small value results in better lighting of nearby surfaces parallel to the light orientation



Size - of the square image mask in pixels

Falloff Exponent – control how quickly the brightness changes between the cone angle and the hotspot

Generate Spot Cone Falloff – create and apply to the selected light(s)



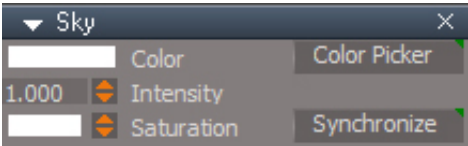
Indigo compatible IES generator panel

The Indigo panel will generate the IES profile and add an IES data node to the light that is read by the Indigo renderer.

Area light and sky light are not documented in the original documentation



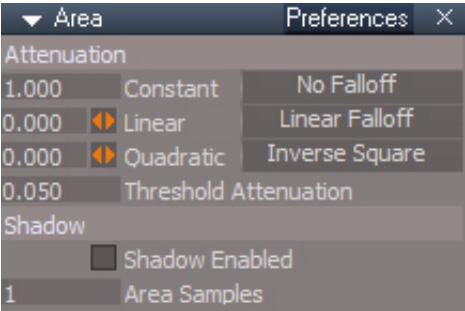
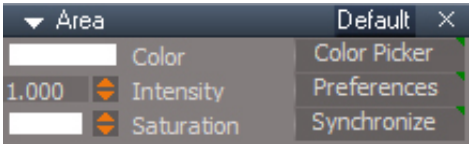
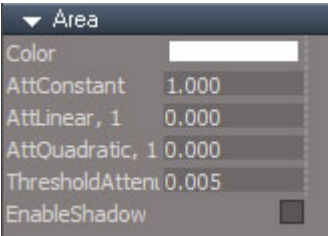
Sky



The Sky light is identical to the infinite light type in its lighting behavior. The mesh has a different appearance.

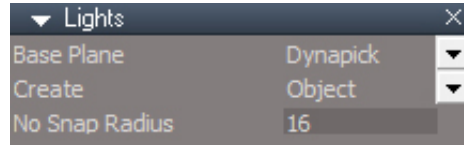


Area



Area Samples – unused

Lights RMB creation options - information not in the original documentation



Base plane

Dynapick - will create primitives aligned to and touching the face of a preexisting object, if no object is below the cursor it will behave the same as Ground

Ground - create primitive on the ground plane, isometric view create on the perpendicular plane of the view

Screen - will not create lights aligned with the view They will be created behind the view mirrored relative to the object location under the cursor. *Looks like a bug, should be centered on the object, not behind the view.* If no object is under the cursor behaves the same as Ground.



To work around the Screen base plane bug, use vertex snapping with 2D snap enabled, this will fix the placement problem, but will not align the light to the view so the final result will be identical to the Dynapick base plane.

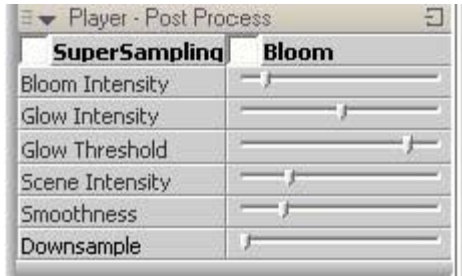
Create mode

Object - create a new stand alone primitive object

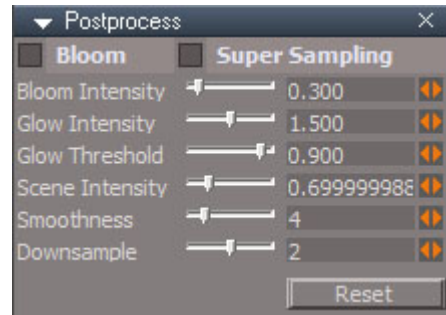
Sibling - create a grouped relationship with the selected item as children of the same group object

7.1.5 Real-time Post Processing

Workspace supports real-time post-processing of rendered images to achieve better and more atmospheric images. The post-processing settings panel can be displayed by switching to the Preferences aspect  of the Stack View while the workspace window is active. The following image shows the post-processing settings panel in its default state.



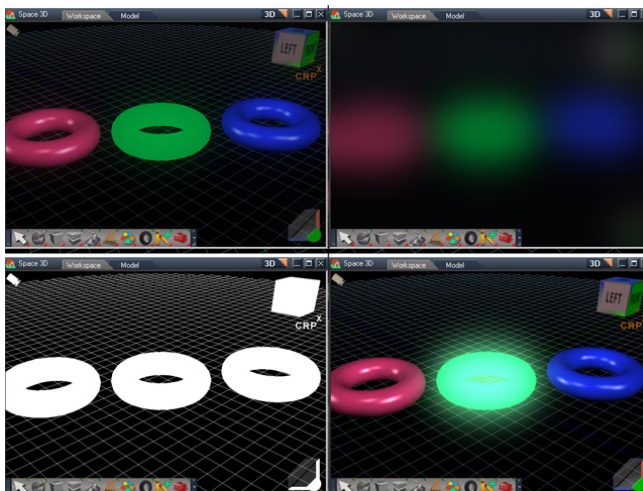
Post-processing panel in the default state.



Post-processing panel in the default state.

Reset – global reset of all postprocess values

- Scene Intensity value below 100 will behave the same as before
- Scene Intensity 100 to 199 to get only the bloom, which is really a blur
- Scene Intensity = 200 to get alpha values as gray color
- Scene Intensity = 300 to get a color key based glow
- Scene Intensity = 301 to get a color key based glow plus scene



*top left - default post process
top right - blur
bottom left - alpha
bottom right - glow based on color key*

The alpha option, Scene intensity=200, needs a mesh background with an alpha material

A large inside out sphere centered in the scene works well for the background mesh

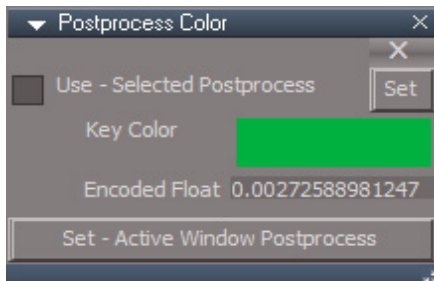
assign a blank d3d material with a Constant Color shader

constant alpha = 0

alpha test set to opaque

alpha test value = 0

The postprocess library has a script to help set values for the glow color key.



lower **X** - deletes the Posprocess Color node, the post process settings are left intact

KeyColor - color for the matching process

Set - turn on glow for the active 3d window using the KeyColor.

Use Selected Postprocess - option for the Set button where the postprocess node is manually selected and used instead of using the post process on the active 3d window

Select Active Window Postprocess - after selecting the active window's post process node, it opens the Postprocess Color panel in the stack view, turns on the glow color for the window using the KeyColor.

Usage:

1. Choose a key color
2. Select the border of the desired 3D window
3. Press the Set button

The Set button will copy the EncodedFloat value, the color key, into the post process Glow Threshold and set the Scene Intensity to 301 to get the glow and the original scene together and then turn on Bloom to show the final effect.



Scene Animator FX

[More Information](#)

7.1.7 Real-time Render To File



RMB opens an explorer window to the render file path



D3D Render [↗ More Information ↖](#)

link red toolbar render buttons ?

Offline Render Engines

YafaRay Information

January 31, 2021

<https://github.com/YafaRay/libYafaRay>

Is the where new development for YafaRay can be found

<https://github.com/YafaRay/Core/releases>

Is where the final release, v3.5.1, can be found

The Unofficial Updates comes with hooks for the YafaRay Render engine installed. YafaRay can be installed anywhere on the machine. If it is placed in one of the predefined locations it can be found via the options setup panel automatically. See the Unofficial Update installation instructions for more details or activate the YafaRay renderer and open the help file from the toolbar.

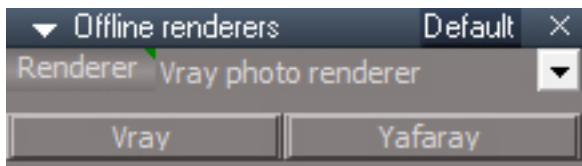
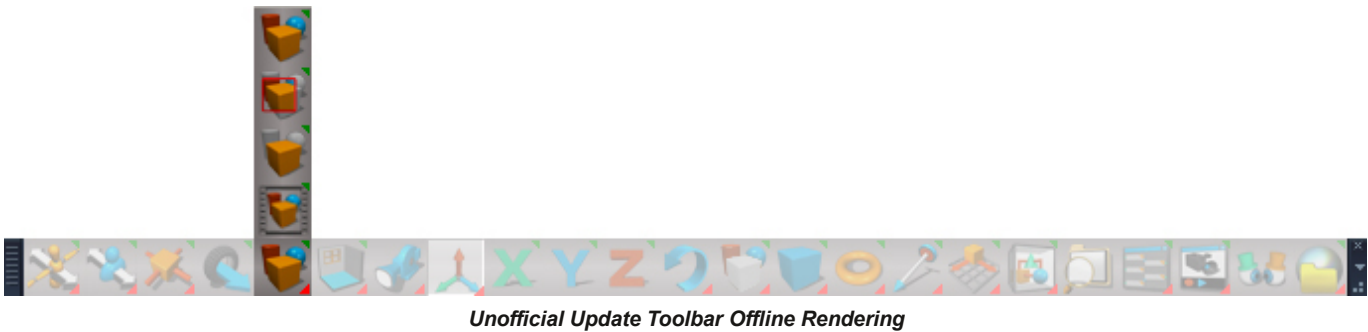
Predefined YafaRay installation locations:

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

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

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

C:\Programs\yafaray_v3\bin\yafaray-xml.exe



RMB on all offline render buttons will open the render preferences for the active render engine and a panel for selecting the current renderer.

Render to File for Activities, Timers, and Scripts

 [More Information](#) 

Chapter 8 - Character Editing

8.1 Character Editing Introduction



8.2 The Tools

8.2.3 Controlling How the Skin Reacts



Convert Soft Selection to Skin Weights

Original manual shows the wrong button icon.



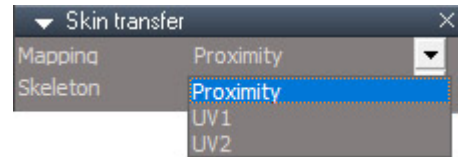
Transfer Skinning Weights

Transfer skin tool – structure, names, distances skeleton matching algorithms; uv1,uv2; proximity skin transfer algorithms

Mapping – match points between characters

Proximity – match points by their positions in 3D space

UV1, UV2 – match points by their positions in 2D UV space

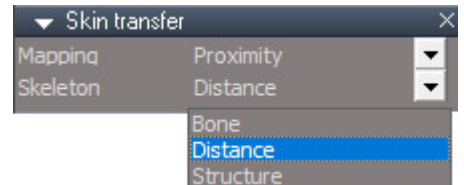


Skeleton – match bones between characters

Bone – match bones by their names. The names must match between the skeletons and be unique within the skeleton.

Distance – match bones by their distance in 3D space

Structure – match bones by their positions in their hierarchy

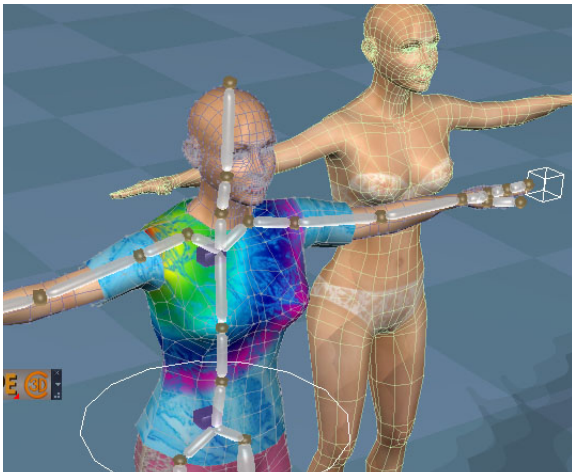


[video link](#)



The "woman" character was loaded from the Avatar - Female library. The shirt mesh was loaded from the same library and attached to the character with the Attach Skin to Skeleton tool. The resulting deformations are not ideal.

The second woman was loaded and animation preferences set for play mode of selected, so the front woman could be animated while leaving the second woman in the default pose.



The clothed woman is set to the default pose and the Transfer Skinning Weights is activated. The options are set for Proximity Mapping and Bone or Structure for the skeleton setting and the naked woman is selected to copy her skin weights.

i Testing shows that both characters must be in the default pose before transferring the weights.



Now the skin weights for the clothing are improved.



Character FK - setup forward kinematic controls for joints

Setup control:

Start Dynamic Pose - mode for the actor

Clear - clear the joint list

Select joints and press the **Add Joint** button

Press **Remove** if needed to remove the selected joint from the list

Press the **List** button to display the selection list in the log view - it opens automatically

ControlName - the name to be used for the fk control

Copy Control - copies the fx control nodes into position in the hierarchy graph - there will be no indication that the copy was successful ⚠ this step will erase undo history

Rotate the joints into their start positions and press **Set Start Positions**

Rotate the joints into their end positions and press **Set End Positions**. This will end dynamic pose mode and reset the actors pose.

Expose Control - links up all the nodes and makes the control value available at the top level of the actor.

Only press once, there is no validation or error checking. ⚠ this step will erase undo history

Start Watch Dog does final initializations to make the input value active and sets the text for the ButtonScript

Panel ID Reset button text - sets the command text for creating the ui elements of the control

Manually create a "panel" button on the actor, just a simple push button control and copy the text from the

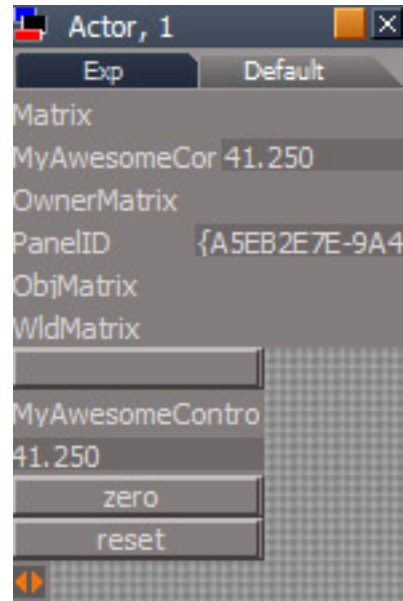
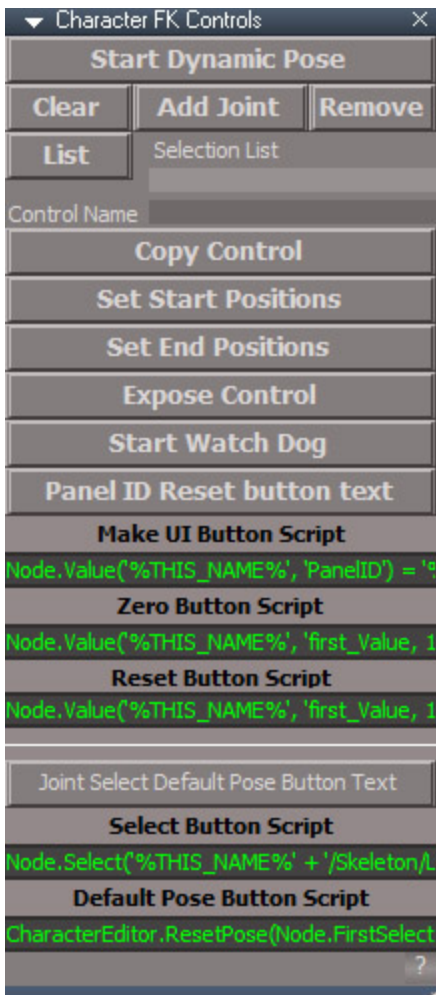
Make UI Button Script in to it

Press the button to create the text, number, a "zero" button, a "reset" button and a scrubber control. The resulting panel must be edited or it will be lost.

Copy the text from the **Zero Button Script** into the zero button, one of the new blank buttons

Copy the text from the **Reset ButtonScript** into the reset button, the other button

The **Joint Select/Default Pose Button Text** is used to create script text for selecting a specific joint or setting the joint and it's children back to the default pose independent of the rest of the skeleton. Select a joint and press the button to update the text. Copy the text to their own buttons on the actor. This is good for imported skeletons that may have overlapping and difficult to select joints or a hierarchy that doesn't work well with trueSpace IK.



blank "panel" button
input value for the FK control
zero button
reset button
scrubber for the FK control

To use the controls:

press the zero button - this will zero the control value and will also unstick a stuck control
 scrub the scrubber to move the joints
 repeat

press the reset button to set the current pose as the zero value

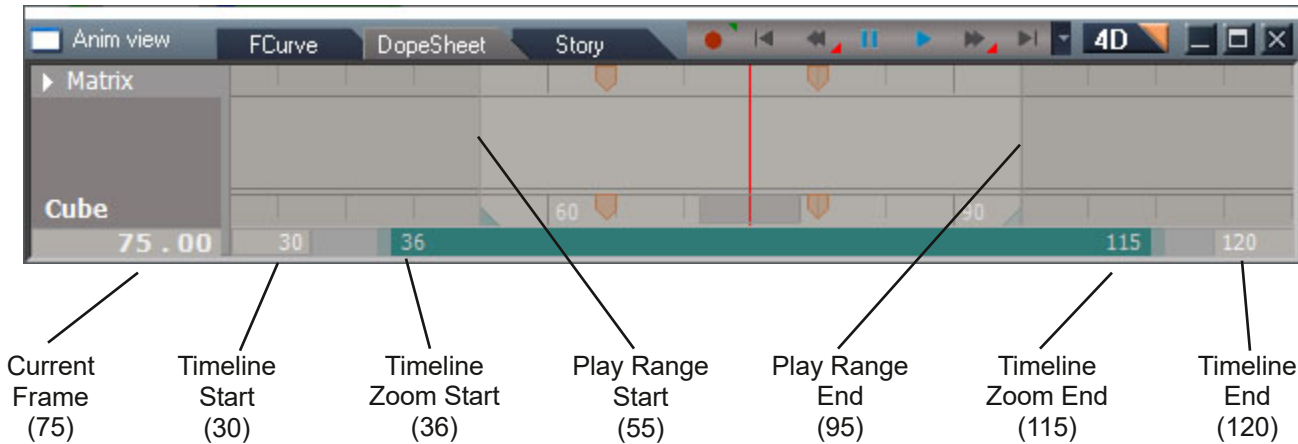
Chapter 9 – Animation

9.1 Animation Introduction

This chapter documents the new animation tools found in the Workspace (it does not cover the animation tools such as the KFE and similar that are found in the Model side). The Workspace features a powerful range of tools for creating animation which will let you work with physics simulation, skeletons, keyframed animation, and imported motion capture via BVH. You can in fact flexibly combine all of these different types of animation, giving you many different ways to achieve exactly what you are looking for.

The chapter begins with a look through each of the tools associated with this process, and then moves on to some introductory tutorials that take you through some ways of creating animation in trueSpace.

9.2 The Animation Editor in detail

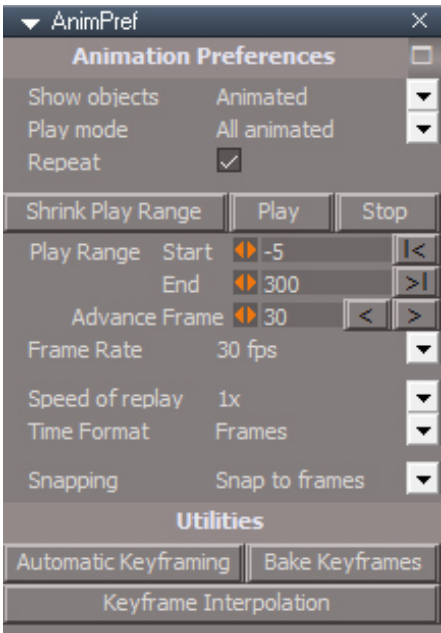


 **Animation Panel** [More Information](#)

Chapter 9.2.1 Error

section 9.2.1.1 **Edit in New Track** belongs inside section 9.2.1.2

9.2.7 Animation Preferences Panel



Chapter 9.2.7 Error

"Play Range Start and End – This defines the start and end of the animation. Note that this is the same as setting the start and end points using the numeric fields at the bottom of the Animation Editor window. Updating those fields in the Animation Editor window will update the fields here on this panel. Note however that updating the fields on this panel will not redraw the Animation Editor window."

It is not the same as setting the start and end points using the numeric fields at the bottom of the Animation Editor window. It is the same as dragging on the play range handles and it does redraw in the Animation Editor window when updating the fields.

Note that the Play Range is limited to values within the min and max values of the animation range start and end.

By default the Animation Range are the set of frames that get rendered. Play Range is for previews.

Show objects only affects the Anim View Story tab.

The small button upper right next to the title will open the Animation Preferences in a floating window.

Shrink Play Range : set the timeline start and end to match the scene minimum and maximum keyframe times  will erase undo history

|< : set timeline start and play range start to 0

>| : set timeline end and play range end to 300

Advance Frame : number of frames to move the current time with each press of the arrow buttons



Automatic Key framing : open the Automatic Keyframing panel. The object navigation widget center sphere will turn green when automatic keyframing is active.

Move, rotate or scale an object or dynapose an actor to get automatic keyframe generation.

IK handles don't create a key, but the act of just selecting a joint after adjusting a handle is enough to make it reevaluate causing a small motion in the joint and create a key for the skeleton.

If a joint is already selected just touching the transform widget is enough to get a key.

Bake Key frames : open the Bake keyframes panel

Set the animation play range to determine what keys get baked or use the Shrink Play Range to fit play range to the key range.

Adjust the Period value to give scripts time to run before a key is set

Select the item to bake and push the Bake Selected Object button

Alternative workflow:

Uncheck Use timeline play range

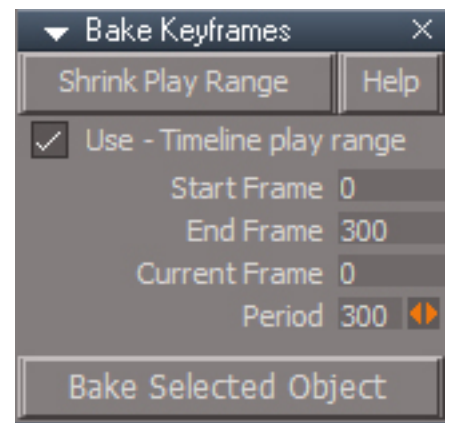
Start Frame – set first frame to key

End Frame – set last frame to key

Current Frame -

Period – delay between keyframe times

Select the item to bake and push the Bake Selected Object button



A keyframe will be created at every time frame for the object.

If the object is controlled by a script, remove the command script before rendering. Command scripts do not render. Baking the keys makes it possible to render an animation created by command scripts.

9.4 Morphs

Morphs give you the ability to store and blend between different states of a model. These different states are created using the regular Point Editing tools - for example, you could use point editing to create a smile on a character, storing it as a morph. Then you create a new morph, point editing to make a frown. Then you can blend between those two expressions (and many more of course), either creating the perfect expression for your character in a still image, or recording your results in an animation.

9.4.1 The Morph Panel



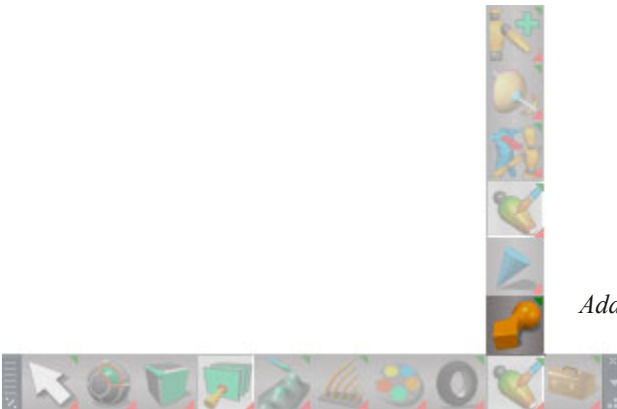
To begin working with morphs, you will need to create the first morph for an object. To do this, click on the Add Morph icon in the character editor tools, and this will open the morph panel, create a new morph for the object, and take you into edit mode on that morph.

Once you have at least one morph added to an object, then the morph panel will open automatically when you click on that object, without the need to click on the Add Morph icon again.

link to soft paint morph mode pg 63

[More Information](#)

Add Morph icon is wrong in the original manual





Interpolation Toolbar



[More Information](#)



Animation Toolbar



[More Information](#)



Chapter 10 – Physics

10.1.1 Physics: Space and Engine



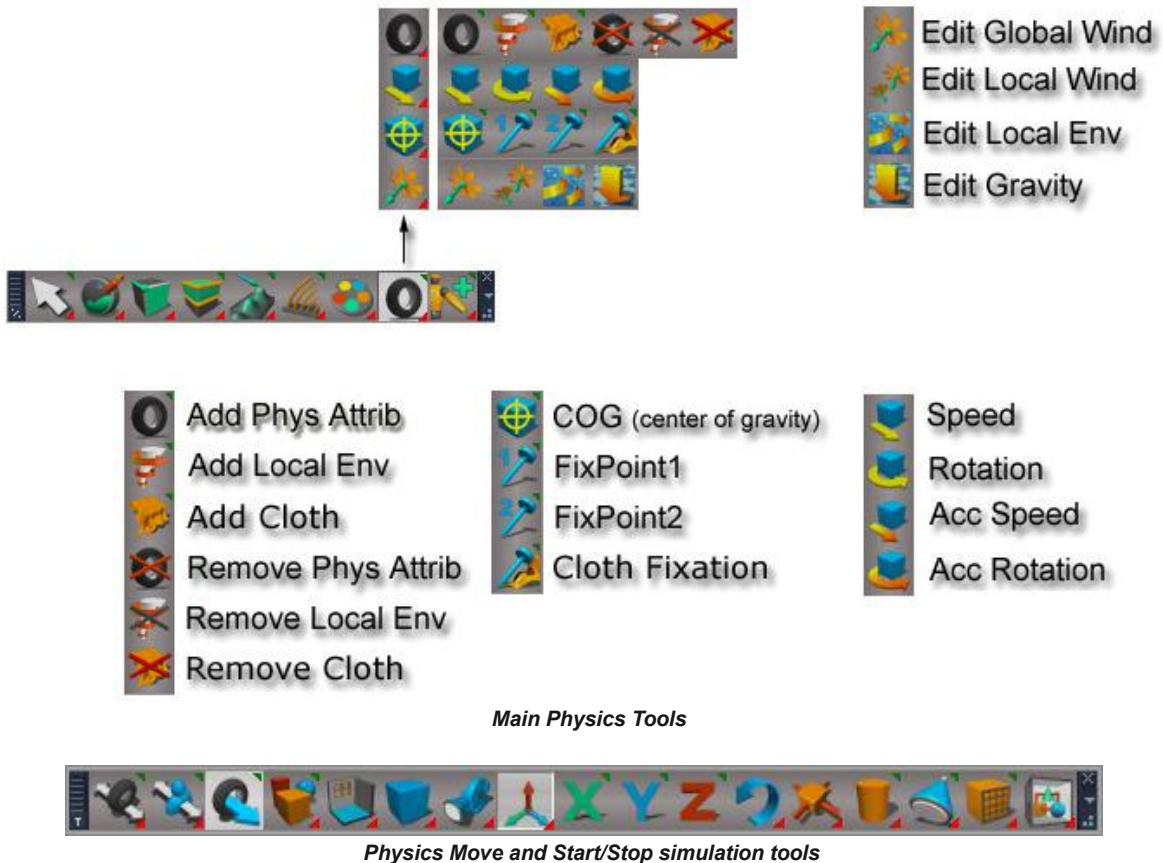
Particle System



[More Information](#)



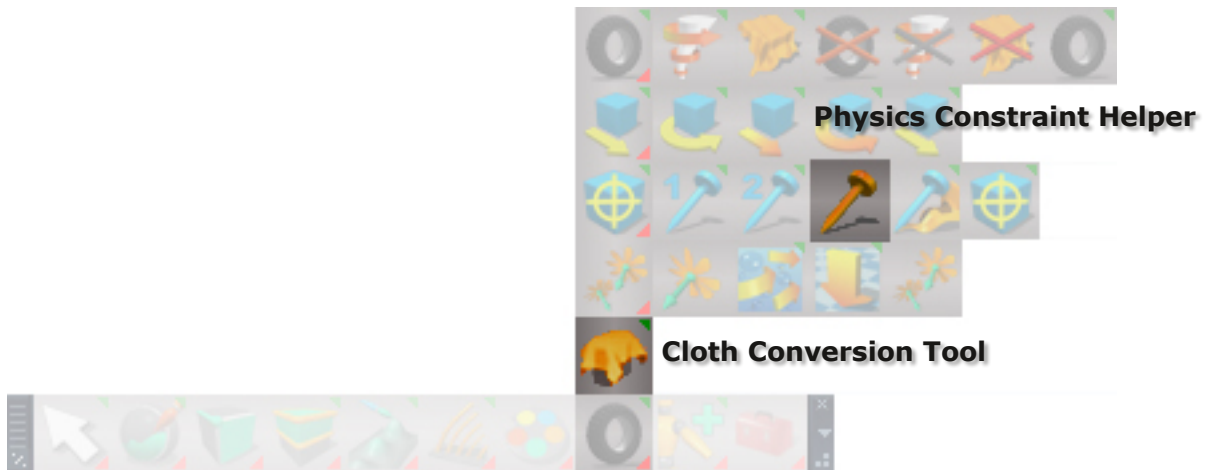
10.2 Physics Toolbar



10.2.4 Physics Cloth

Original Manual Error: "R-click in the title bar" should be "L-click in the title bar"

Tip:- If you wanted to see the Exp aspect in the stack you can L-click in the title bar in the LE and choose Detach from the menu.



Unofficial Update Main Physics Tools

10.2.7 Centre of Gravity and Fixation



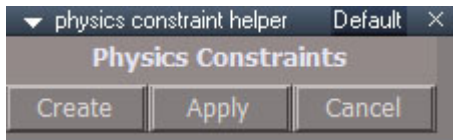
Center Of Gravity



Fixation point 1



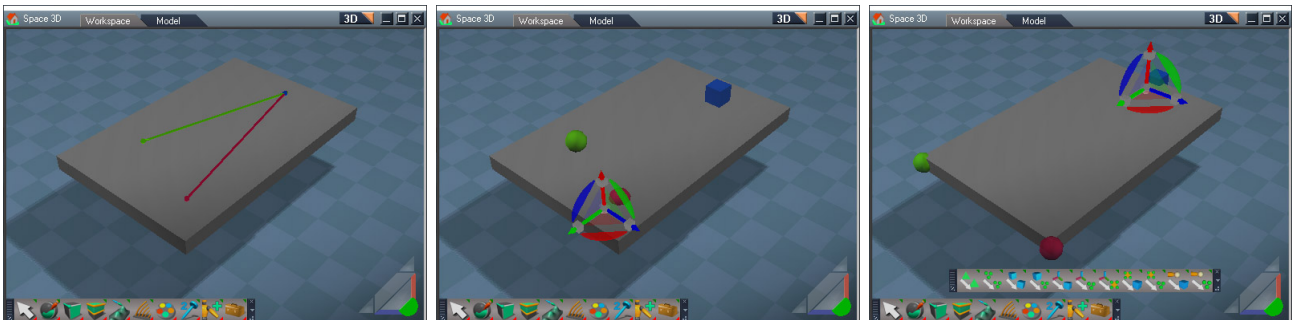
Fixation point 2



Physics Constraint Helper: creates helper objects in the scene for positioning the center of gravity and fixation points

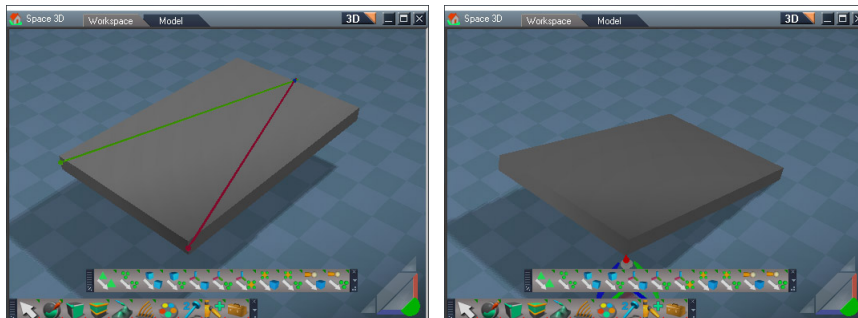
Create: create helpers for the object center of gravity and fixation points

Apply: copy the helper transform values to the object center of gravity and fixation points



Fixation point 1 is green, fixation point 2 is red and the center of gravity is blue.

Sequence of images shows 2 fixation points on the object, next the helpers are created, then snapping tools are used to precisely position the physics points.



Next the positions of the helpers are applied to the physics points and the final image shows the result of a physics simulation.

10.2.7.5 Cloth Conversion Tool



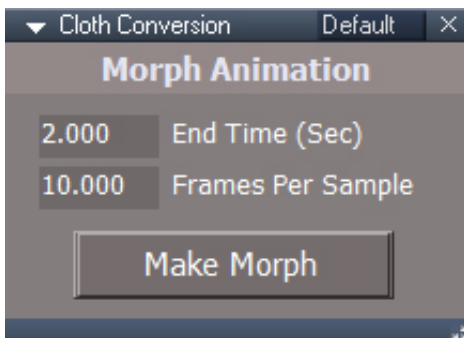
LMB open the cloth conversion panel

RMB VTA panels

The first step of any cloth conversion is to determine the length of the animation.

Make sure the "PhysEngine" node is visible and you can see the Current Time.

Run the simulation and take note of the Current Time value. Stop the simulation after determining the desired end time.

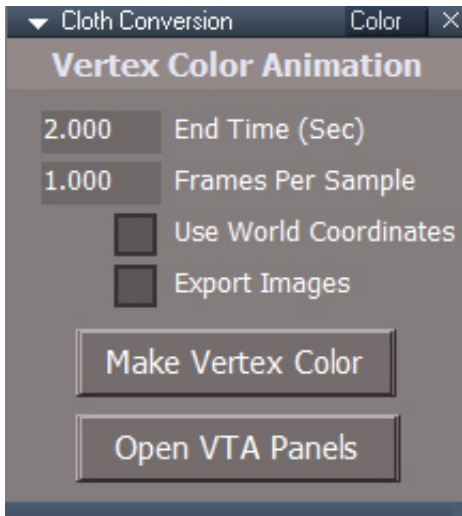


Morph Animation:

End Time - number of seconds to capture, where the time starts at 0.

Frames Per Sample - number of frames that run between samples. A value of 10 means 10 simulation frames will run between each capture of the mesh state.

Make Morph - create a morph animation from the selected cloth simulation.



Vertex Color Animation:

End Time - number of seconds to capture, where the time starts at 0.

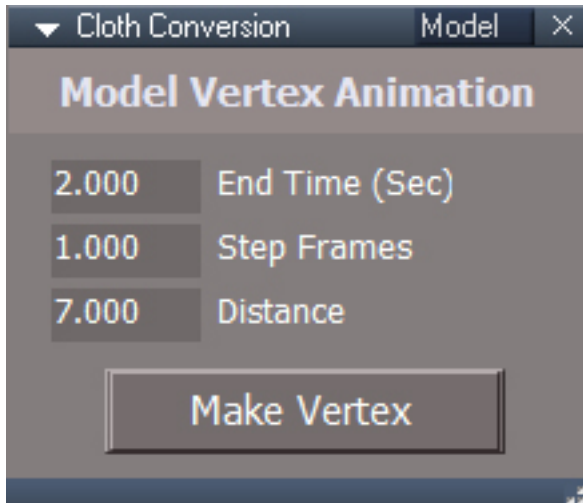
Frames Per Sample - number of frames that run between samples. A value of 10 means 10 simulation frames will run between each capture of the mesh state.

Use World Coordinates - when checked a vertex shader that uses the objects world transformations is copied into the material. Otherwise the transformation is not included. Checking this option only works for the case where the original cloth object does not have any rotations. Freezing transforms is recommended.

Export Images - export the resulting position and normals animation images for use in other applications.

Make Vertex Color - create a vertex color animation from the selected cloth simulation with the option to export the bitmaps as image texture files.

Open VTA Panels - used to open the Vertex Texture Animation(VTA) panels for all scene items. The panels are dragged into the Stack view Panel tab to activate the vertex color animations.



Modelspace Vertex Animation:

End Time - number of seconds to capture, where the time starts at 0.

Step Frames - number of frames that run between samples. A value of 1 means for each simulation frame the mesh state is captured.

Distance - offset value in x,y and z to prevent the copied meshes from interfering with the cloth simulation run.

Make Vertex - create a collection of meshes from the selected cloth simulation to be used in the modelspace python script for vertex animation.

The first step is to determine the length of the animation.

Make sure the "PhysEngine" node is visible and you can see the Current Time.

Run the simulation and take note of the Current Time value. Stop the simulation after determining the desired end time.

Morph Animation

Set the End Time to the length of the desired animation.

Set the Frames per Sample value. This is how many frames of the simulation will run before a morph target is created.

Select the object and press the Make Morph button.

Answer "Yes" to any construction history alerts.

Vertex Color Animation

The cloth object must have D3D nodes style materials. Use the material converter script if the material is a compiled material.

Option: freeze the cloth objects transforms.

Set the End Time to the length of the desired animation.

Set the Frames per Sample value. This is how many frames of the simulation will run before a morph target is created. Vertex color animation is stepped, so a value of 1 works best.

Use World Coordinates if the cloth object does not have any rotation values. Uncheck if the object has any rotations.

If exporting the result to another 3D program or game engine, check the Export Images.

Select the object and press the Make Vertex Color button.

Answer "Yes" to any construction history alerts.

As instructed press the Vertex_shader button, "activate/return to scene". The LE will open to it automatically.

vta panel A Vertex Texture Animation (VTA) panel is added to the object and the button can be used to "wake up" all the VTA animations in the scene.

Ctrl drag the Vertex Texture Animation(VTA) panel into the stack Panel to activate the animation.

Modelspace Vertex Animation

Set the End Time to the length of the desired animation.

Set the Step Frames value. This is how many frames of the simulation will run before a shape target mesh is created.

Set the distance so that the copied meshes don't interfere with the cloth simulation.

Select the object and press the Make Vertex button.

Answer "Yes" to any construction history alerts.

Close any open Scene View panels

Go to modelspace

Load the python script, "modelCloth2vertexAnim.py", into the Scene script(top of the dropdown list)

Edit the script so the timeIncrement is the same as the Step Frames value.

Run the script to create the vertex animation.

Remove the script from the scene

For most cases the Morph Animation is the best choice for use inside of trueSpace.

Press the "Esc" key to abort a run.

Always answer yes when asked about construction history.

The Stack view Panels tab must be visible to see and render vertex color animations

Vertex colors only render with the D3D render engine

Vertex color normals will not process within trueSpace shaders.

Vertex color animation works better if the cloth object does not have any rotation values. The main advantage is that the animated object can be moved and rotated. Use the freeze transform script to remove rotations.

Exported vertex color textures have only been tested with the PNG file format.

Use the Open All VTA Panels button or the VTA Activate All VTAs button after reloading the scene file.

The 3 Flags.RsScn demo scene uses a UV Mapper node, so these cloth objects should be flattened before freezing their transforms for a vertex color run.

Vertex color result can be moved and rotated if the original object does not have any rotations and the Use World Coordinates is checked.

Close any open Scene View panels before running any python scripts. There is an incompatibility between the workspace Scene View and the modelspace python editor. If it is open tS will slow down right after opening the python editor. To fully recover from this state, close the Scene View and restart trueSpace.