Chapter 2: User Interface 16

IDEA have section for error list and not documented in original

add introduction and include reason for undo history - scripts run as series of steps, each step undo able, but maybe bad if only undo some of the steps of a script

idea - make undos for some things (predictable undo number) like align/distribute script with warning to use special undo or option to take away undos(clear history)

jump to original chapter 2
placeholder

informational

More Information

simple warning or something that may need to change, like a clear undo maybe unnecessary

Might be a good idea to mention about a single selected object and multiple selected objects
Most of the tools/scripts only work on one object at a time

note to self - looks like just opening some panels will erase undo history - search for in next pass through

"Only scripts that open a floating panel from a scene uses RsApp.ClearHistory()"

added quick guide after table of contents so add 9 to page numbers below:

Tip
When calling a floating panel that resides some where other then the scene, it is not necessary to add the path (from script) to the RootNode nor the PanelEditorNode attributes, if your panel frame has the correct path(s) already saved

"Protect NURBS unknown, sets a checkbox on /Scripts/Commands/DeSelectNURBS node
used ???? where ????"

If you disable Protect NURBS, all icons that run DeSelectNURBS will not unselect NURBS

Freeze Transform

"note to self, the flatten axis portion of the code looks a little odd, check it out later"
flattenAxis is not shown as an option in the panel "Hidden"

The disconnects should be eliminated

UU7PDF
Images needing update
First Person Navigator panel #127

page 131

"Bottom Row Modelspace left to right
R turn on AutoRecord, does not record a keyframe"

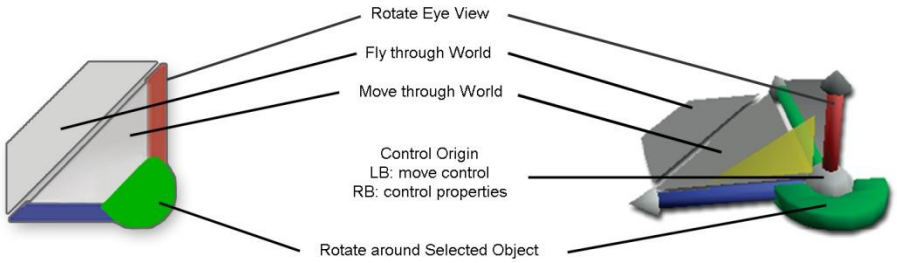
This has been fixed

page 160

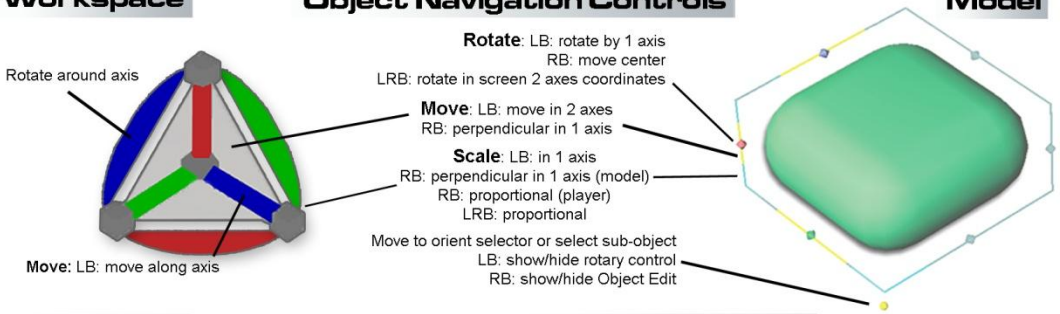
just noticed quick guide pages are bigger than the rest

trueSpace7.6 Quick Guide

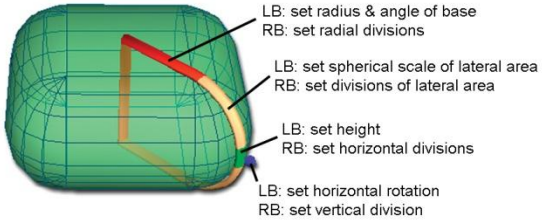
Workspace — View Navigation Controls — Model



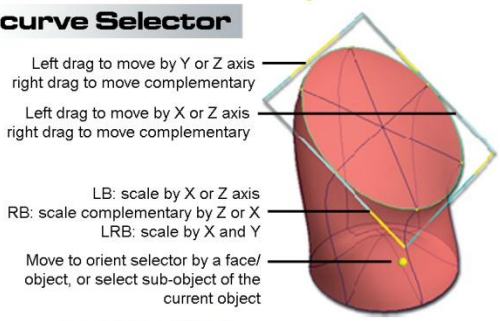
Workspace — Object Navigation Controls — Model



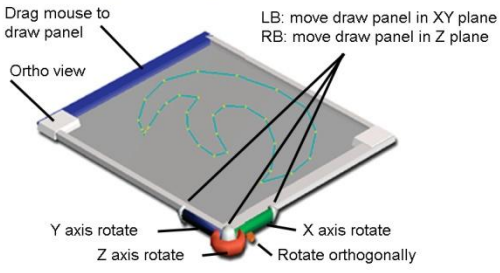
Magic Ring



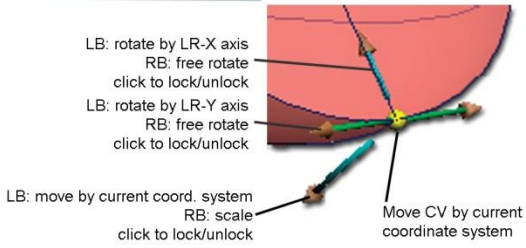
Isocurve Selector



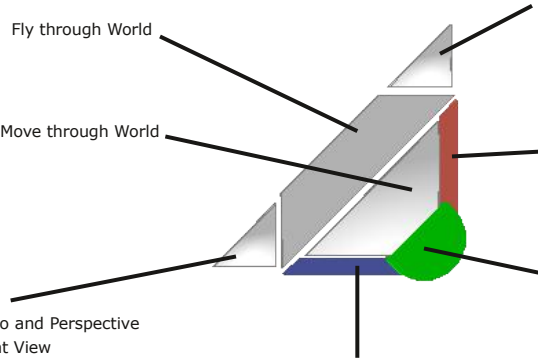
Draw Panel



CV Handles



View Navigation Controls



LB click cycles Front, Left, Back, Right, and Perspective
LB + Drag resets the current View
RB click creates and sets an Entry Point camera at the current view

Fly through World

Move through World

LB Rotate YZ
RB click opens Animation Editor

LB Rotate around Selected Object
Shift + RB shows the current Eye camera panel
Shift + LB click opens the 3D View Widget
Ctrl + LB click Rotates the Perspective view
Alt + RB click resets the Perspective view

LB click cycles Nearest Ortho and Perspective
LB + Drag resets the current View
RB click creates and sets a Camera at the current view

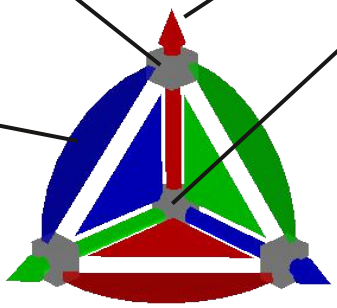
LB Rotate X
RB click opens Link Editor

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

Object Navigation Controls

Alt + LB click toggles the X. Y. and Z Axis locks.
Alt + MB click toggle the Object Move widget

Alt + MB click toggle the Object Scale widget



LB + Drag - Moves selected object in X and Y
MB + Drag - Moves the widget
MB click activates the Object Move widget
RB click closes the widget
Ctrl + RB click opens the Object Navigation Widget's Preferences
Ctrl + LB click opens the selected object in the Link Editor

Alt + LB first click navigates to the Object in the Link Editor
Alt + LB second click navigates to the inside of the Object in the Link Editor

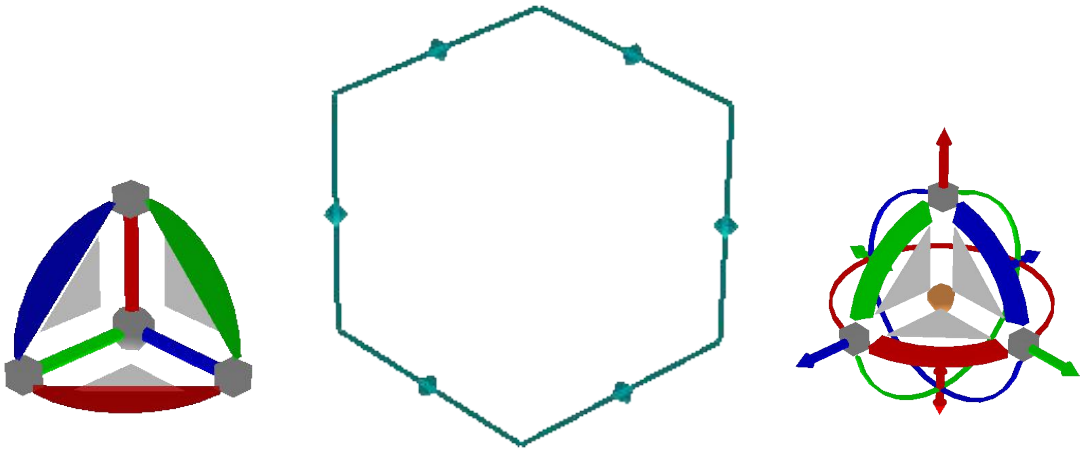
P + LB click opens the Axis widget 'Toggles On/Off'
letter O + LB - opens the Mesh Origin tool
Alt + MB click toggle the Object Move widget

LB + Drag rotates from the Axis
RB + Drag rotates from object center/origin
Alt + MB click toggle the Object Rotate widget

Ctrl + LB click any surface opens their Mouse settings
Shift + LB click in empty 3D Space deactivates Object widgets - Move, Rotate, Scale

Bars, Triangles, Cubes and Arcs

Shift + LB click = switch to the other Object Navigation Widgets
H + LB click = switch to/from the Selector Cage Widget
J + LB click = add/remove cage widget to the current widget



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

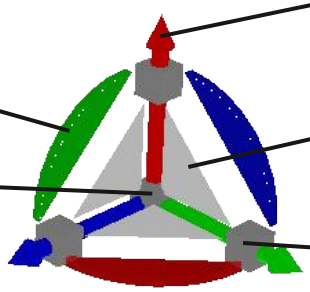
Point Edit Navigation Controls

LB to rotate about the selection center
RB to rotate about the Axis
Alt + MB click toggle the Object Rotate widget

Alt + LB click toggle X, Y, and Z Axis locking
Alt + MB click toggle the Object Move widget

Alt + LB click open quaf menu
Ctrl + LB close quad menu

LB + Drag - Moves selected element in X and Y
MB + Drag - Moves the widget
Alt + LB click - Opens the Quad Menu
Ctrl + LB click - Closes the Quad Menu
Ctrl + RB click - Opens the Point Edit Widget's Preferences
Alt + MB click toggle the Object Move widget



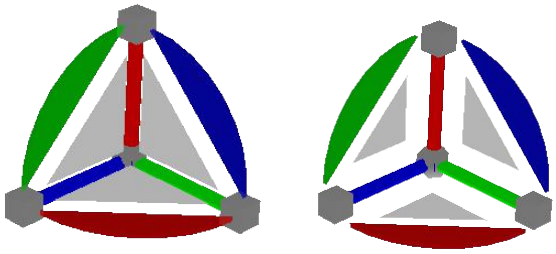
Alt + MB click toggle the Object Scale widget

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 + LB click - Hides UnSelected elements
Comma + LB click - UnHides All elements
O + LB click Toggles - Mesh Object Coordinate Mode

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

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

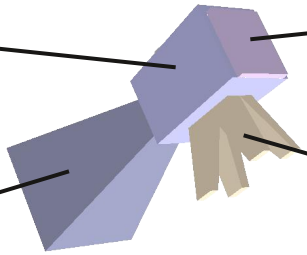


i + drag any surface = Opens the widget's Additional Shortcuts Help floating panel

Camera Controls

LB = Spin Left & Right
ALT + LB = Rotate Left/Right Up/Down
RB - Tilt Up & Down
Alt + RB = Tilt Left & Right
RB select = Camera floating panel

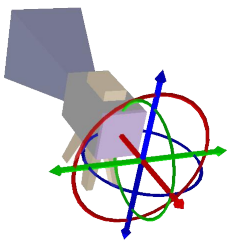
LB = Move X & Y
LB + Alt = Forward & Reverse
RB = Move X & Z



LB = Move Left & Right
LB + Alt = Move X & Z
RB = Move Up & Down

FOV
LB + Drag = Adjust FOV
LB = View from Camera
RB = Reset FOV

Shift + LB click any surface = switch camera widget



Background Controls

b + i + drag = help

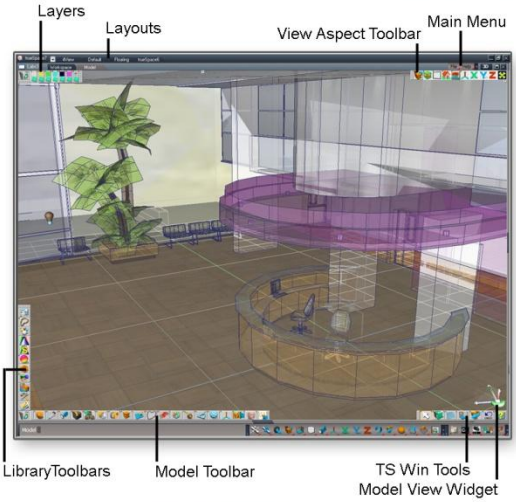
Wheel - Moves In and Out
Shift + Wheel - Zooms (FOV) and Moves In and Out
Ctrl + Shift + MB Drag - Zooms (FOV)
MB Drag - Rotate in X and Y
Ctrl + MB Drag - Move in X, Y, and Z
Shift + MB Drag - Look around
Ctrl + MB click - Looks At Selection
MB click - Moves the view to show the current selection or 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

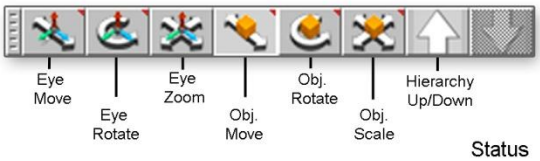
N + LB - 3D View - Auto Select NURBS On|Off
Ctrl + X + LB - Cut selected object
Ctrl + V + LB - 3D View - Paste last Cut object
L + LB - Lock selection
U + LB - Unlock selection
ALT + LB - Select Locked objects

Workspace View

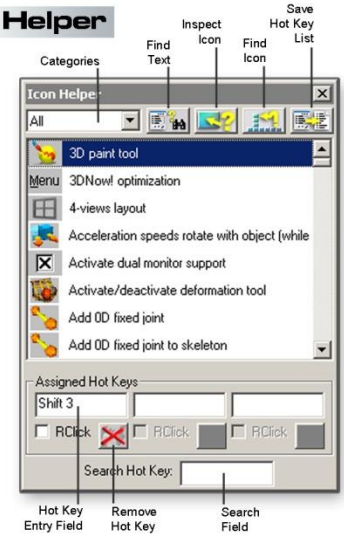
Model View



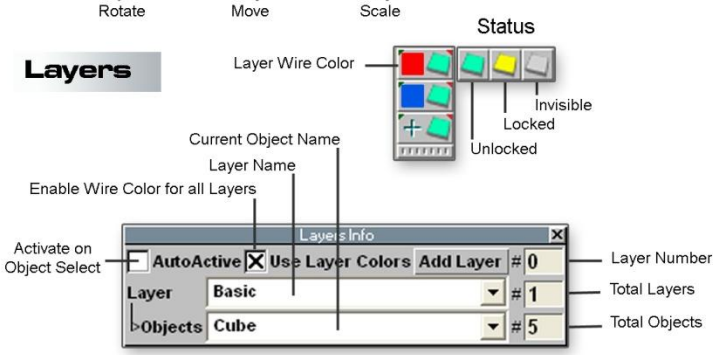
Nav Tools



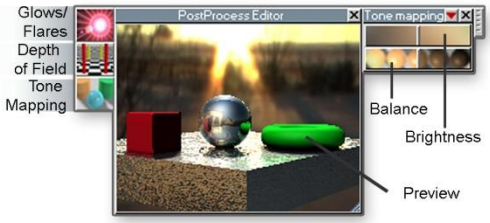
Icon Helper



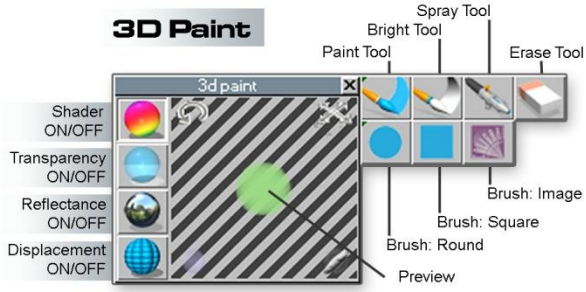
Layers



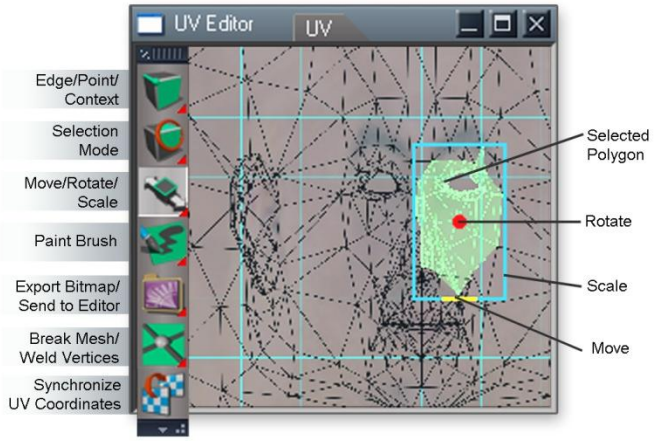
Post Process Editor



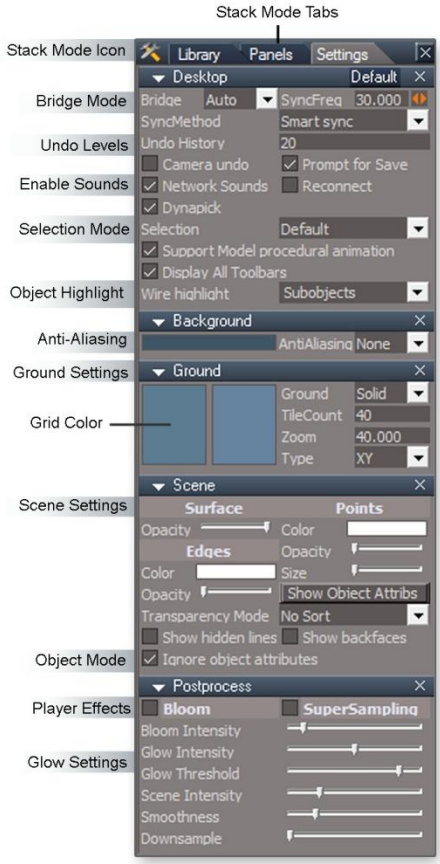
3D Paint



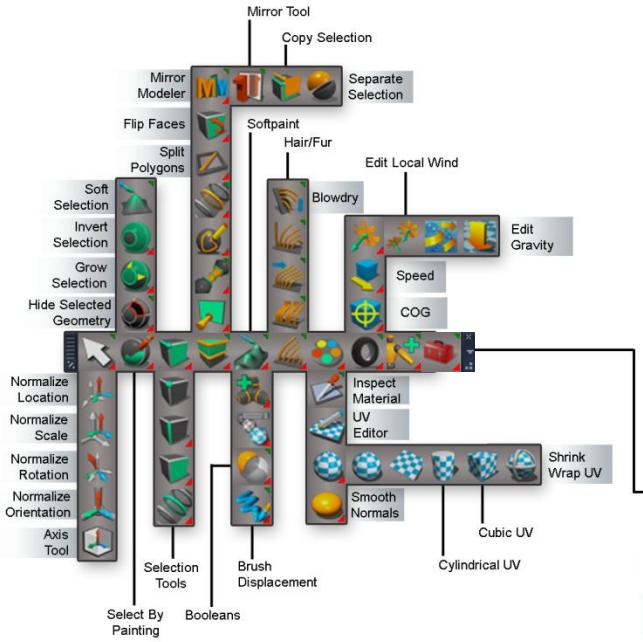
Workspace UV Mapping Editor



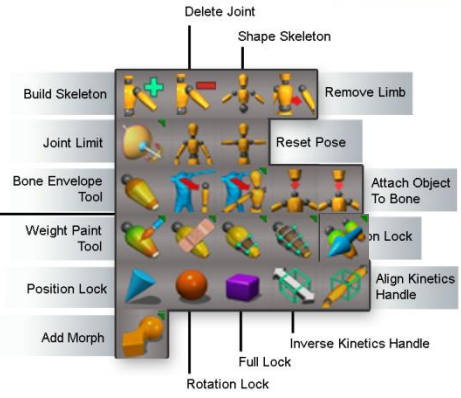
Preferences



Workspace Toolbar

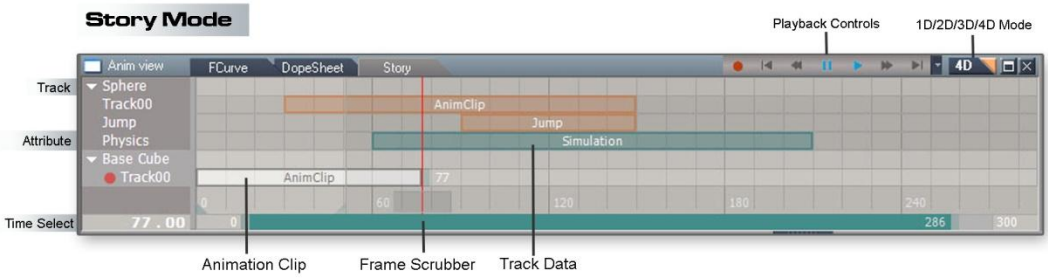


Character Animator

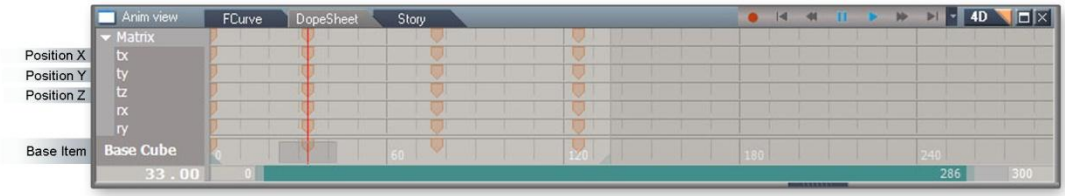


Animation Editor

Story Mode

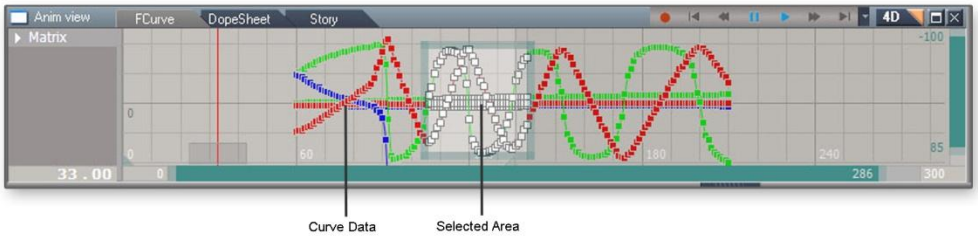


DopeSheet Mode

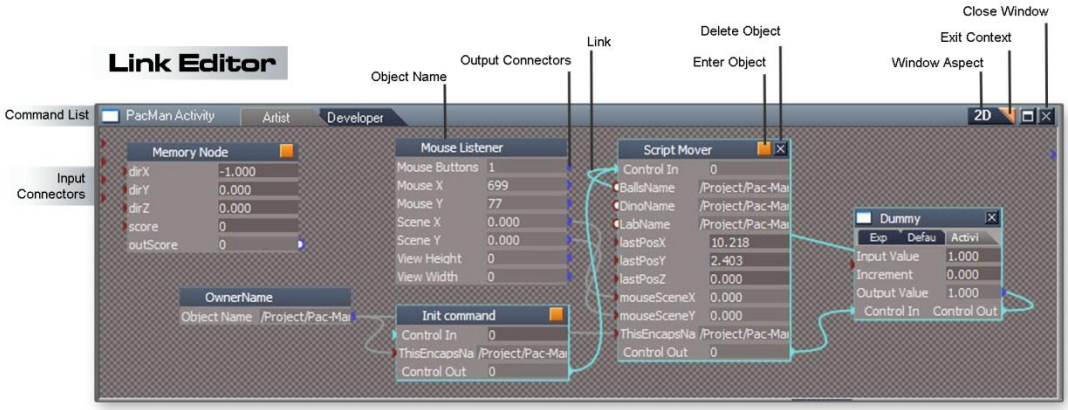


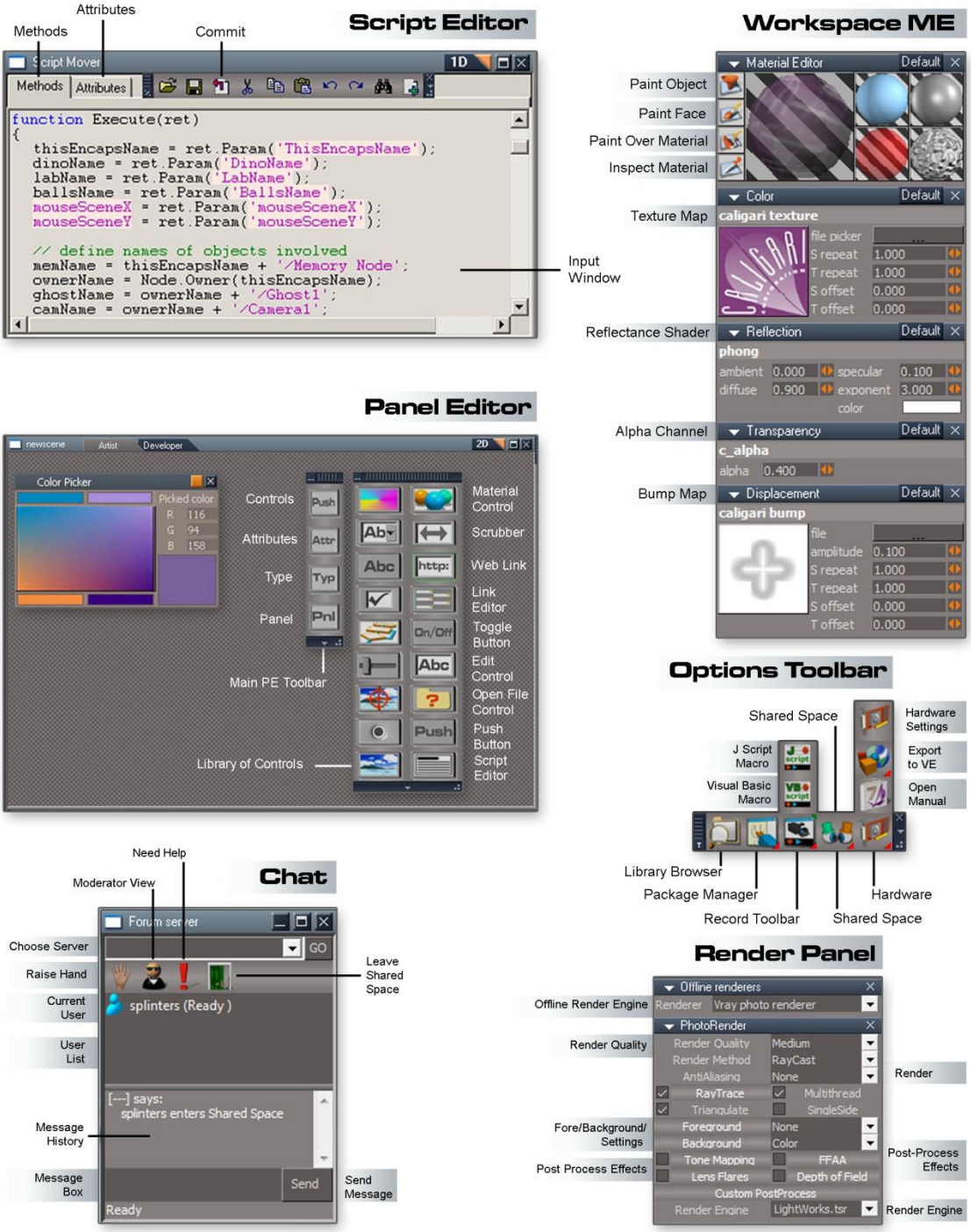
Key Frames

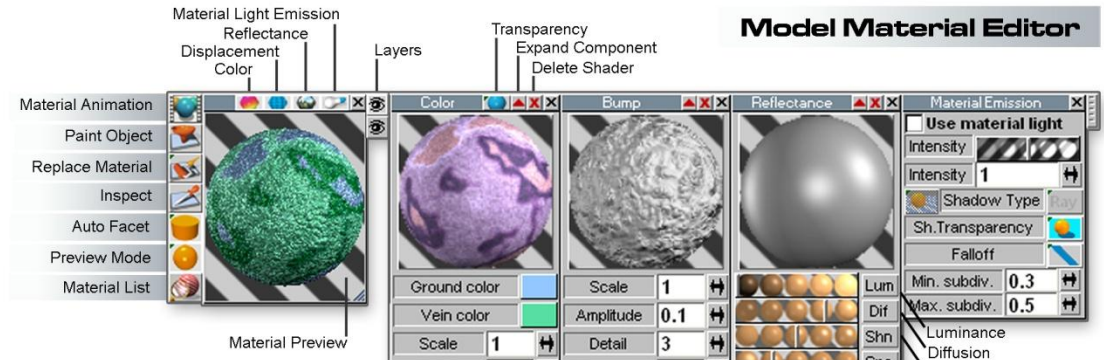
FCurve Mode

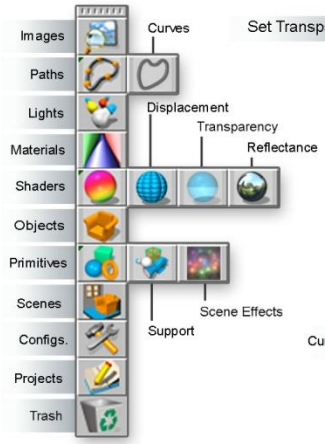


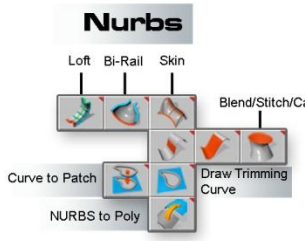
Link Editor

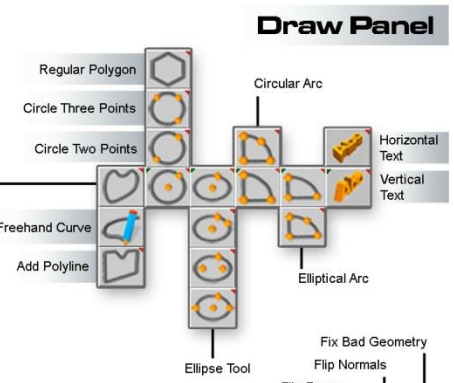


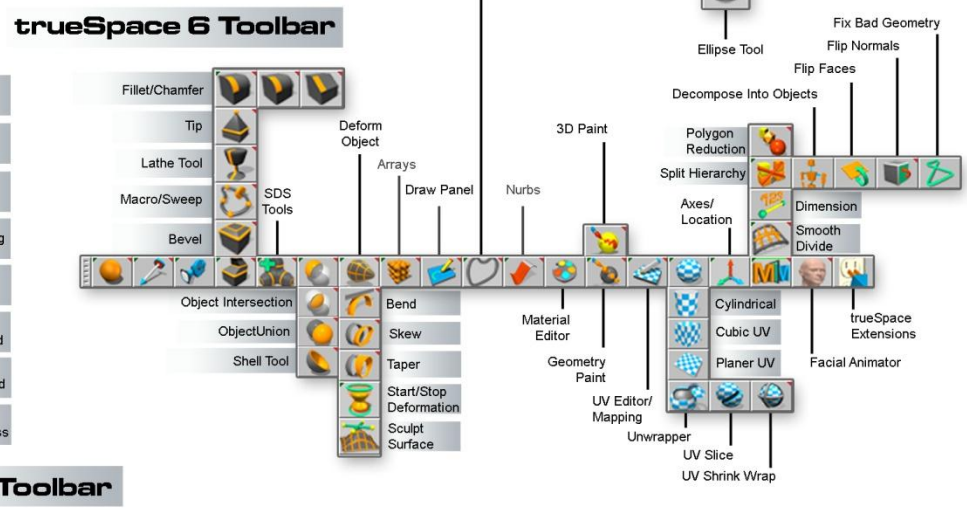

Script Editor
Attributes
Methods
Commit
Script Mover
1D
Methods
Attributes
function Execute(ret)
{
thisEncapsName = ret.Param('ThisEncapsName');
dinoName = ret.Param('DinoName');
labName = ret.Param('LabName');
ballsName = ret.Param('BallsName');
mouseSceneX = ret.Param('mouseSceneX');
mouseSceneY = ret.Param('mouseSceneY');
// define names of objects involved
memName = thisEncapsName + '/Memory Node';
ownerName = Node.Owner(thisEncapsName);
ghostName = ownerName + '/Ghost1';
camName = ownerName + '/Camera1';
Input Window
Workspace ME
Material Editor
Default
Paint Object
Paint Face
Paint Over Material
Inspect Material
Color
Texture Map
caligari texture
file picker
S repeat 1.000
T repeat 1.000
S offset 0.000
T offset 0.000
Reflectance Shader
Reflection
phong
ambient 0.000
specular 0.100
diffuse 0.900
exponent 3.000
color
Alpha Channel
Transparency
c_alpha
alpha 0.400
Bump Map
Displacement
caligari bump
file
amplitude 0.100
S repeat 1.000
T repeat 1.000
S offset 0.000
T offset 0.000
Panel Editor
newscene
Artist
Developer
2D
Color Picker
Picked color
R 116
G 94
B 158
Controls
Attributes
Type
Panel
Main PE Toolbar
Library of Controls
Material Control
Scrubber
Web Link
Link Editor
Toggle Button
Edit Control
Open File Control
Push Button
Script Editor
Options Toolbar
Shared Space
Hardware Settings
J Script Macro
Export to VE
Visual Basic Macro
Open Manual
Library Browser
Package Manager
Record Toolbar
Shared Space
Hardware
Chat
Need Help
Moderator View
Forum server
GO
Choose Server
Raise Hand
Current User
User List
splinters (Ready)
Leave Shared Space
[---] says:
splinters enters Shared Space
Message History
Message Box
Send
Send Message
Ready
Render Panel
Offline renderers
Offline Render Engine
Renderer
Vray photo renderer
PhotoRender
Render Quality
Render Quality
Medium
Render Method
RayCast
AntiAliasing
None
Render
RayTrace
Multithread
Triangulate
SingleSide
Fore/Background/ Settings
Foreground
None
Background
Color
Post Process Effects
Tone Mapping
FFAA
Post-Process Effects
Lens Flares
Depth of Field
Custom PostProcess
Render Engine
LightWorks.tsr
Render Engine


Model Material Editor
Material Light Emission
Reflectance
Displacement
Color
Layers
Transparency
Expand Component
Delete Shader
Material Animation
Paint Object
Replace Material
Inspect
Auto Facet
Preview Mode
Material List
Material Preview
Color
Bump
Reflectance
Material Emission
Use material light
Intensity
Intensity 1
Shadow Type
Sh.Transparency
Falloff
Min. subdiv. 0.3
Max. subdiv. 0.5
Ground color
Vein color
Scale 1
Detail 4
Vein contras 1
Grain 1
Scale 1
Amplitude 0.1
Detail 3
Sharpness 1
Lum
Dif
Shn
Spc
Rfl
Trn
Rfc
Specular color
Luminance
Diffusion
Shininess
Specularity
Reflection
Transmission
Refraction
Set Transparency
0.5


Libraries
Images
Paths
Lights
Materials
Shaders
Objects
Primitives
Scenes
Configs.
Projects
Trash
Curves
Displacement
Transparency
Reflectance
Scene Effects
Support


Nurbs
Loft
Bi-Rail
Skin
Blend/Stitch/Cap
Curve to Patch
Draw Trimming Curve
NURBS to Poly


Draw Panel
Regular Polygon
Circle Three Points
Circle Two Points
Circular Arc
Horizontal Text
Vertical Text
Freehand Curve
Add Polyline
Elliptical Arc
Ellipse Tool


trueSpace 6 Toolbar
Render Output
Render Quality
Rendering Visibility
Antialiasing
Render Options
Render Foreground
Render Background
Render Postprocess
Fillet/Chamfer
Tip
Lathe Tool
Macro/Sweep
Bevel
SDS Tools
Deform Object
Arrays
Draw Panel
Nurbs
3D Paint
Object Intersection
ObjectUnion
Shell Tool
Bend
Skew
Taper
Start/Stop Deformation
Sculpt Surface
Material Editor
Geometry Paint
UV Editor/ Mapping
Unwrapper
UV Slice
UV Shrink Wrap
Cylindrical
Cubic UV
Planer UV
Axes/ Location
Polygon Reduction
Split Hierarchy
Decompose Into Objects
Fix Bad Geometry
Flip Normals
Flip Faces
Dimension
Smooth Divide
trueSpace Extensions
Facial Animator


Render Toolbar

2.0 New Scene and Context

Stack Toolbar New Scene and Context Unofficial Update

Bottom Toolbar New Scene and Context

New Scene

This removes all objects from your Workspace and starts you off with a fresh scene. It will first prompt you to save your work by pressing no and saving it to a library or to continue and clear the scene.

RMB open link editor to the scene

Reset to Default Context

Opens a dialog to confirm the reset to default context. System reset operation.

RMB old behavior resets to default context without any warning or dialog choice.

Save current state same as file menu save using the ctx extension

2.4.5 Preset Shortcuts

trueSpace comes with a set of predefined shortcuts for Workspace, Link Editor, and some that work in every view. The following table shows the list of these predefined shortcuts.

Global Shortcuts

Key	Description
CTRL F1	3D window
CTRL F2	Link Editor
CTRL F3	Command Prompt
CTRL F4	Command History
CTRL F5	Output Console
CTRL F6	Status View
CTRL F7	Animation View
CTRL F8	Package Manager
CTRL F9	Scene View
CTRL F11	Library Browser
CTRL F12	Shared Space
SHIFT CTRL R	Reset to Default Context
SHIFT CTRL N	Generate New Space
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first Child object
UP	Select Parent object
SHIFT CTRL LEFT	Select Previous object & Look At
SHIFT CTRL RIGHT	Select Next object & Look At

Global Shortcuts

Key	Description
Z	Object Move tool
X	Object Rotate tool
C	Object Scale tool
A	Camera Move tool
S	Camera Rotate tool
D	Camera FOV tool
SHIFT X	X lock - On/Off
SHIFT Y	Y lock - On/Off
SHIFT Z	Z lock - On/Off
F1	World Coordinates
F2	Object Coordinates
F3	Screen Coordinates
F4	Tangent Coordinates
F5	X lock - On/Off
F6	Y lock - On/Off
F7	Z lock - On/Off
F8	Reset View

3D Window Shortcuts

Key	Description
DELETE	Delete selected object
CTRL K	Delete selected object
CTRL I	Inspect Material
CTRL R	Render to file
CTRL ~	Set the selected camera as active
CTRL 1	Switch to Perspective Eye view
CTRL 2	Switch to Top orthogonal view
CTRL 3	Switch to Bottom orthogonal view
CTRL 4	Switch to Front orthogonal view
CTRL 5	Switch to Back orthogonal view
CTRL 6	Switch to Left orthogonal view
CTRL 7	Switch to Right orthogonal view
CTRL 8	Switch Nearest Orthogonal view
CTRL 9	Switch to Isometric view
CTRL 0	Reset View
CTRL Z	Undo
CTRL SHIFT Z	Redo
CTRL C	Copy object
4	Object Move Left -X
6	Object Move Right +X
8	Object Move Forward -Y
2	Object Move Reverse +Y
Page Up	Object Move UP +Z
Page Down	Object Move Down -Z
HOME	Object Normalize Location

3D Window Shortcuts

Key	Description
7	Object Rotate Left +Z
9	Object Rotate Right -Z
1	Object Rotate Forward -X
3	Object Rotate Reverse +X
0	Object Rotate Left +Y
.	Object Rotate Right -Y
CTRL 7	Object Rotate Left +Z +45
CTRL 9	Object Rotate Right –Z -45
CTRL 1	Object Rotate Forward –X -45
CTRL 3	Object Rotate Forward +X +45
CTRL 0	Object Rotate Left + Y
CTRL .	Object Rotate Right -Y
END	Object Normalize Rotation
SHIFT LEFT	Previous Key frame
SHIFT RIGHT	Next Key frame
CTRL LEFT	Previous Frame
CTRL RIGHT	Next Frame
SHIFT HOME	Start Frame
SHIFT END	End Frame
CTRL HOME	Play
CTRL END	Pause
ESC	Unselect
TAB	Object Navigation Widget - On/Off
SHIFT + L	Workspace Layers

Point Edit Shortcuts

Key	Description
ESC	Clear selection
DELETE	Delete selected Elements
SHIFT DELETE	Collapse Loop
CTRL K	Delete
CTRL C	Copy selection
CTRL F	Form Face
TAB	Point Edit Widget On/Off
V	Select Vertices
F	Select Faces
E	Select Edges
L	Select Face Loops
T	Select Context
SHIFT I	Invert Selection
SHIFT A	Select Connected
SHIFT C	Convert Selection
SHIFT S	Smooth Selection
SHIFT O	Outline Selection
Q	Quad Divide Selection
SHIFT Q	Smooth Quad Divide
CTRL Q	Quadrify Selected polygons
M	Mirror Selection
CTRL M	Mirror Modeler
SHIFT B	Form Polygonal Bridge
/	Split polygons
SHIFT /	Merge polygons
H	Hide Selected geometry
SHIFT H	Hide Unselected geometry
U	Show All hidden geometry

Point Edit Shortcuts

Key	Description
ADD	Add SDS
SUBTRACT	Remove SDS
CTRL D	Dynamic Sweep
CTRL S	Sweep selected Face
CTRL B	Bevel tool
CTRL T	Tip selected Face
CTRL P	Add Polygons
CTRL E	Add Edges
CTRL V	Add Vertices
CTRL L	Add Loop
CTRL W	Weld geometry together
CTRL H	Heal Vertices
CTRL O	Optimize Triangulation
SPACEBAR	Open Quad toolbars
~	Default selection settings
1	Select by Painting
2	Select by Rectangle
3	Select by Lasso
4	Select by Move
5	Soft Selection
6	Select by Material
7	Select Edge Loops
8	Select Face Loops
9	Select Visible Geometry
0	Select All Geometry
-	Shrink selection
+	Grow selection

Animation Editor

Key	Descriptio
DELETE	Delete object
CTRL C	Copy object
CTRL X	Cut object
CTRL V	Paste object
CTRL A	Select All
CTRL Z	Undo
CTRL SHIFT Z	Redo
SHIFT LEFT	Previous Key frame
SHIFT RIGHT	Next Key frame
K	Set Key frame
CTRL LEFT	Previous Frame
CTRL RIGHT	Next Frame
SHIFT HOME	Start Frame
SHIFT END	End Frame
CTRL HOME	Play
CTRL END	Pause
ESC	Stop & Start Frame

UV Editor

Key	Description
CTRL Z	Undo
CTRL SHIFT Z	REDO

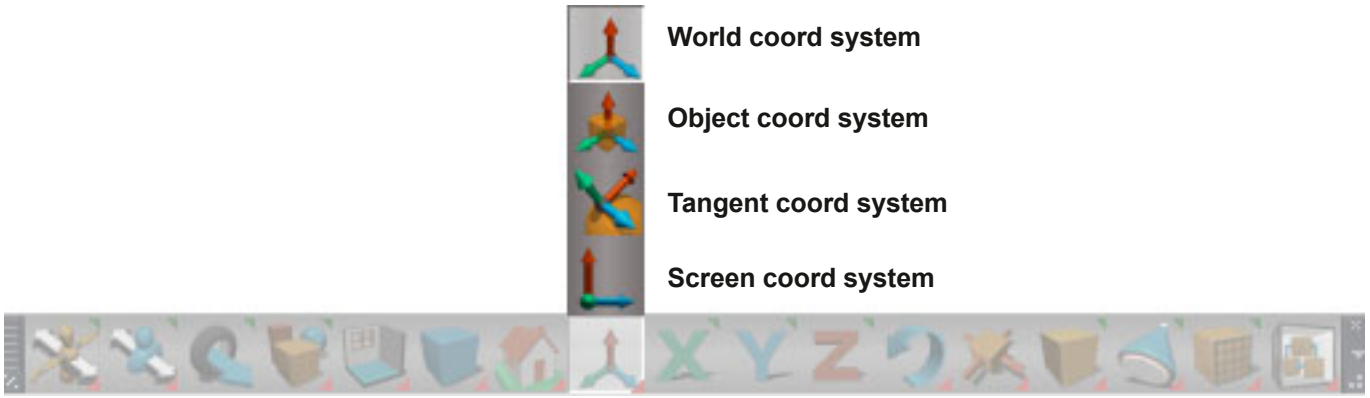
Info panel

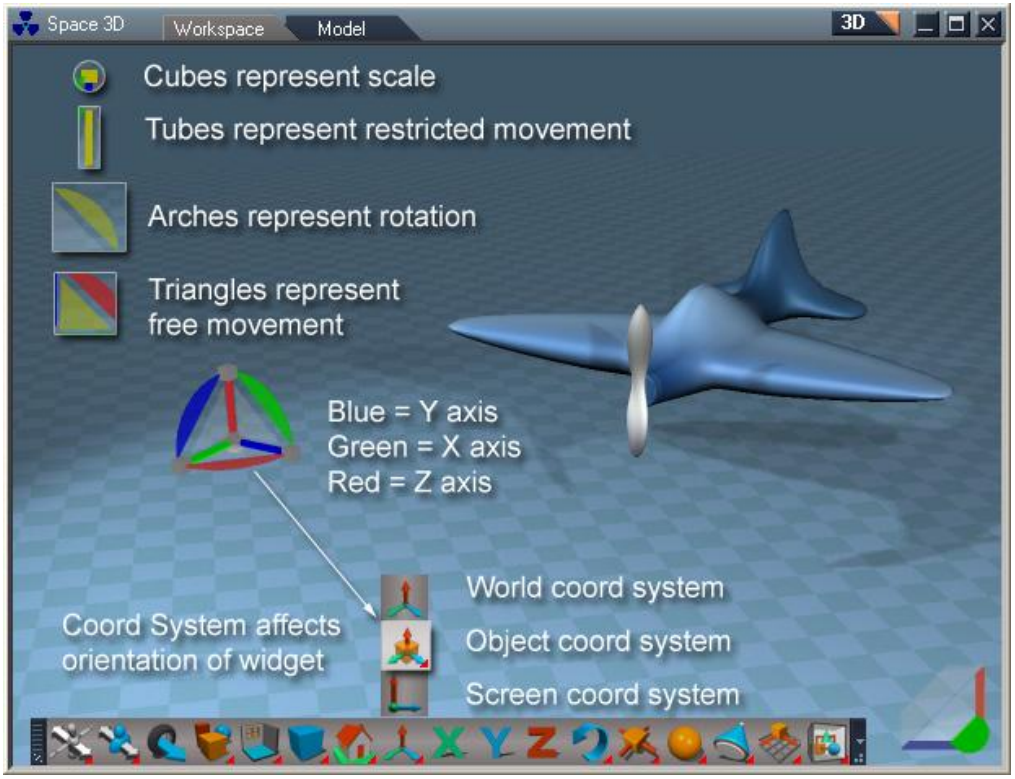
Key	Description
CTRL Z	Undo
CTRL SHIFT Z	REDO

Link Editor

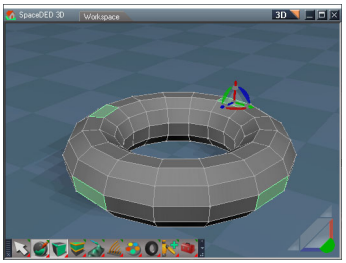
Key	Description
DELETE	Delete selected node
CTRL	Undo
CTRL SHIFT Z	Redo
CTRL Drag	Copy selected object
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first Child
UP	Select Parent
CTRL SHIFT LEFT	Select Previous & Center
CTRL SHIFT RIGHT	Select Next & Center
HOME	Current scene in Link Editor
NUM KEYS	
9	Maximize & Arrange All
3	Minimize & Arrange All
5	Center All
1	Zoom All
*	Iconize All
-	Minimize All
+	Maximize All
/	Arrange All
Mouse buttons	
RMB	Zoom ALL/Move to Top Left
RMB + Drag	Zoom In/Out
MMB	Center selection
MMB + Drag	Move
CTRL + MMB	Up one level
MMW	Scroll Up and Down

2.5.1 Using Widgets

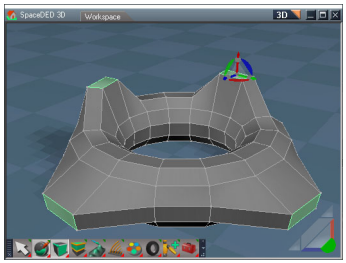




Tangent Coordinate System is useful for point edit modeling. The object navigation widget in tangent mode behaves the same as in world coord mode.
The tangent Coordinate system is not documented in the original manual.



Before move



After move

When 2 or more unconnected elements are selected the widget will be centered on one of the elements and each of the elements will move as if they each have an individual widget with the z handle aligned with the normal direction of the element and that moves with the visible widget. The elements will each move, rotate and scale individually instead of from a shared central location.

When 2 or more meshes are in point edit mode together and the selection has elements from two or more of the meshes, the rotation and scale will be centered on the widget and the elements do not move as individuals.

When a single edge or point is selected the tangent coordinate behaves the same as the object coord system.
When a single face is selected it behaves almost identically to the object coord. At some angles the widget will be slightly rotated on the z axis.

If 2 adjacent elements are selected the tangent widget is the same as object widget. This includes two points joined by an invisible triangle edge.

The object navigation widget will line up with the first selected object when in object coord mode.

2.6 Info Panel

math expressions can be used in the numeric input fields:

+, -, *, /, sin, cos, arcsin, arcos, ln, log, exp, sqrt, PI

2.7 3D View – Workspace

2.7.1 Object Navigation Tools

Dynamic Pose

Phys Move

Move

Rotate

Scale

Look At

Unofficial Update Bottom Toolbar

Object Move RMB to exit tool.

Object Rotate RMB to exit tool.

Object Scale RMB to exit tool.

Object Look At

Object UnLook At

To use UnLook At, select the object that is to be freed then click the button to remove the Look At constraint.

will clear undo history

2.7.2 View Navigation Tools

Unofficial Update Bottom Toolbar

Unofficial Update Stack Toolbar

First Person Navigation

Camera Move

Camera Rotate

Camera FOV

Rectangle Zoom

Look At Selection

Reset View

Camera Move RMB to exit tool

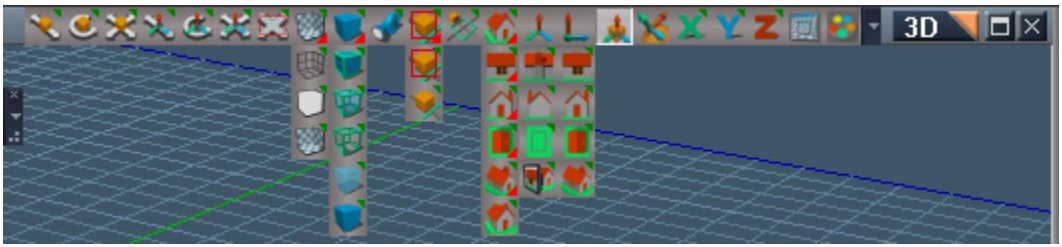
Camera Rotate RMB to exit tool

Camera FOV RMB to exit tool

Look At Selection RMB select and look at next object.

Zoom To Selection Left-Click = Zoom to Selection / Right Click = Zoom to next object

3D Mini Toolbar



Unofficial Update 3D Mini Toolbar

 **Perspective View**  **Isometric**

Perspective and Isometric include a RMB action to rotate the view in 90 degree increments. The view positions and orientations are relative to the default view position not the current view position and orientation.

ⓘ Each RMB press will use up about 7 undo steps

 **Open New 3D View**

 **Open Material Editor**

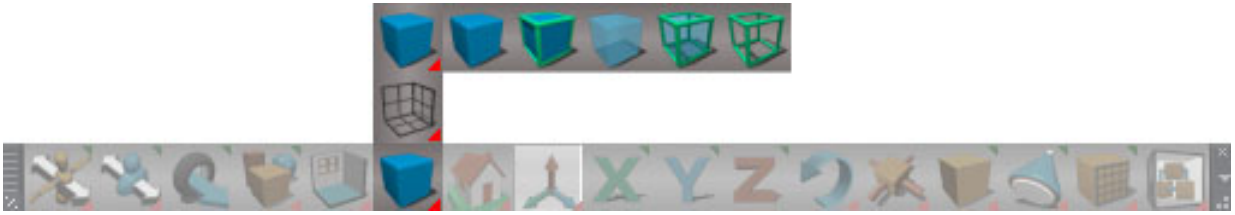
 **Set Camera** RMB switch to perspective view.

 **Zoom To Selection** RMB reset view.

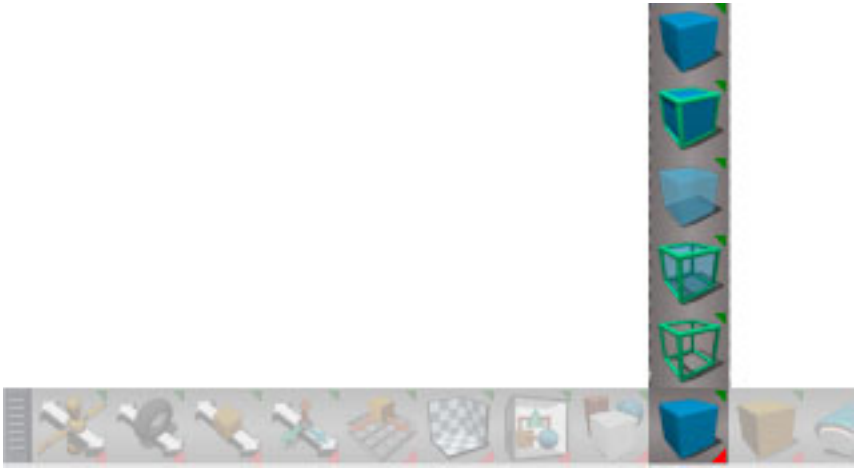
ⓘ Save New View - Does not work for the camera window ??? Dont know where this goes ???

2.7.4 Render Preferences Presets

With this icon group you can set the real-time render modes.



Render Preferences Presets



Unofficial Update Render Preferences Presets

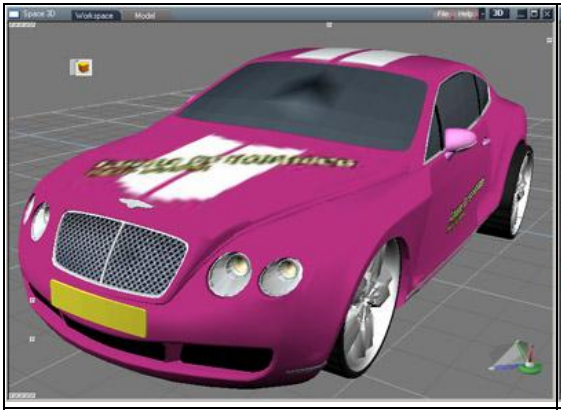
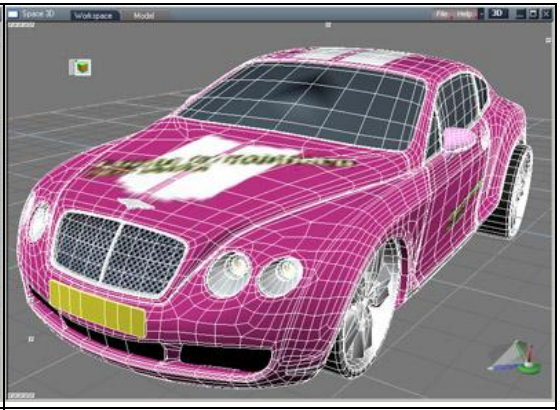
All the buttons in the render preferences and ground display preferences change the active 3D window.
RMB will change all 3D windows.

Draw as Solid 

trueSpace will render all objects in your scene as completely opaque, shaded, and preview rendered.

Draw as Solid Outline 

trueSpace will render the objects just as in solid mode and also outline the edges and vertices of the objects.

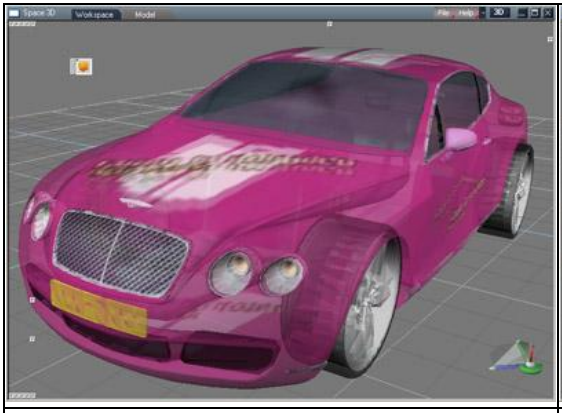
	
Solid Mode	***Solid Outline Mode***

Draw as Transparent 

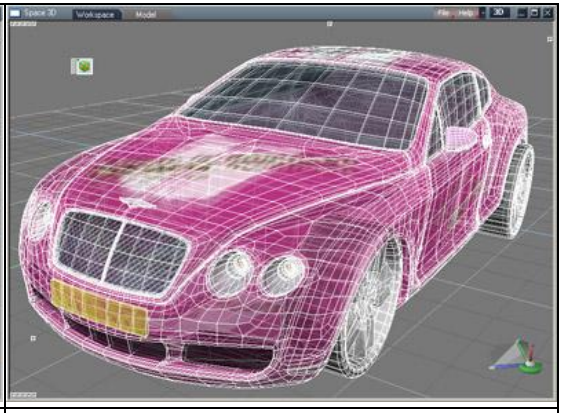
This will allow you to partially see through objects.

Draw Transparent Outline 

This is similar to Draw as Transparent, with the added function of highlighting all vertices and edges.



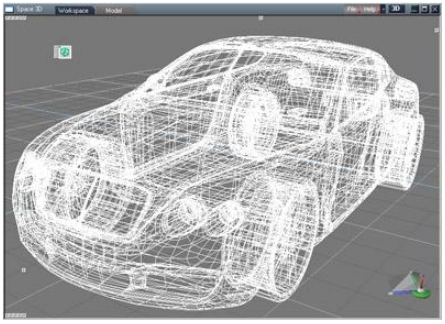
Transparent



Transparent outline

Draw as Wireframe 

This will not give you a preview render of what your object will look like in the final render, but it will speed up navigation in the interface because there is less information on screen for the video card to update.



Wireframe

Ground Display Mode

Unofficial Update Ground Display Mode

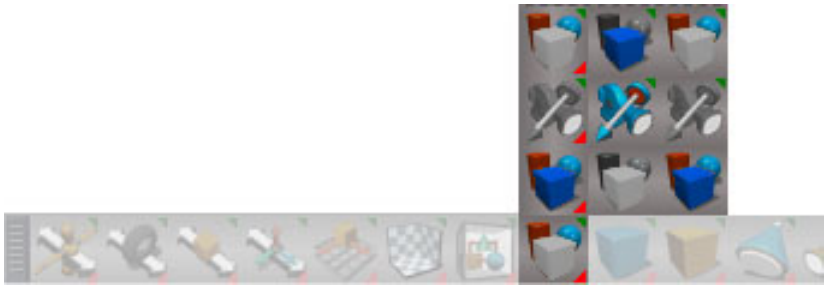
Ground Solid

Ground None

Ground Wire

The Render Preferences Ground settings also has a **TwoSided** ground which is the same as solid but with a visible bottom surface.

All the buttons in the render preferences and ground display preferences change the active 3D window.
RMB will change all 3D windows.



Show and Hide

 **Show Selected**

 **Hide Selected**

 **Show Cameras and Lights** show all cameras and lights

 **Hide Cameras and Lights** hide all cameras and lights

 **Show All**

 **Hide All**

RClick on the buttons opens the object render attributes panel for the first selected object.

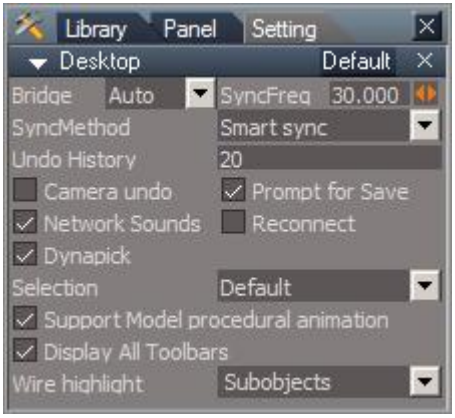
To isolate the selected objects Hide All then Show Selected. There is no isolate selected icon button. The link editor mini toolbar has a button, "H", that has that function.

Background shortcuts
Period + LB Drag - Hide Unselected (Isolate Selected)
Comma + LB Drag - Shows All

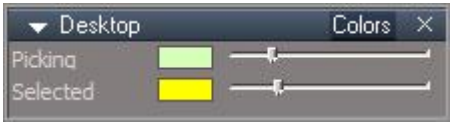
More Information

Show All, Hide All, Hide and Show Cameras and Lights can eat up many undo steps

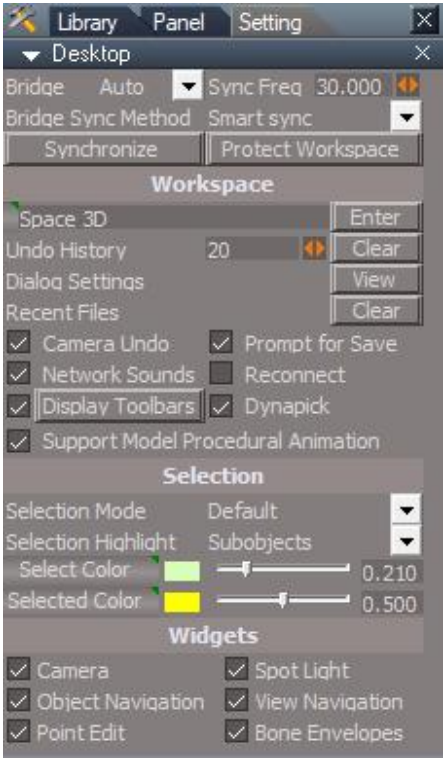
2.7.6 Desktop Preferences



Desktop Default



Colors Aspect.



Unofficial Desktop Combined Default

Synchronize - open the Synchronize panel.

Protect Workspace - open the Protect Workspace panel

Scene naming - small button LMB copies the scene name into the text input field, RMB sets the text input field to “Space 3D”,
Enter - rename the scene based on the text input field.

Clear – clear undo history

View - open the dialog settings panel

Clear – clear recent files list

Display Toolbars button and checkbox – uncheck to only show the 3D toolbars in the active 3D window. Press the button to restore normal behavior.

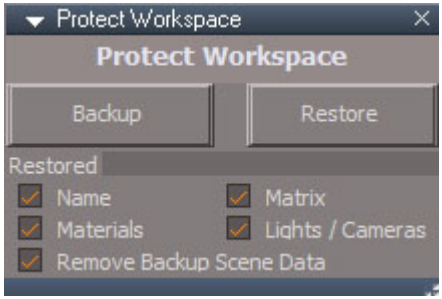
~~Picking~~ **Select and Selected Color** reset buttons – RMB to reset, LMB no effect

~~Picking~~ Select: Double click to Set the selected object wire color.

Selected: Double click to Set selected object wire color.

Protect Workspace

submitted a version that does not require clearing undo history, fingers crossed



The Protect Workspace script saves and restores workspace attributes to protect them against modelspace changes. It protects materials, object names, matrix transforms, camera fov and spotlight angle.

Backup - save data and materials nodes to temporary stores in the scene

Restore - restore the data and material nodes

Protection Options

Name - backup object names
Materials - backup object materials
Matrix - backup object transformation values
Lights/Camera - backup spotlight angle and camera fov
Remove Backup Scene Data - optionally delete the backup data when the restore is run

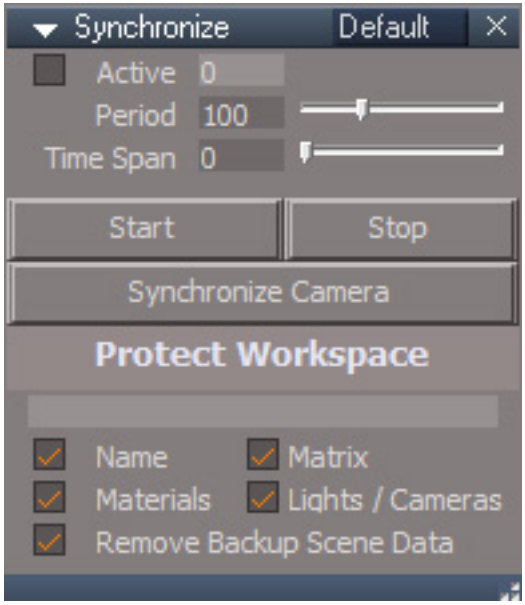
Usage:

Push the Backup button to backup the nodes and values
Open modelspace and do modelspace work
Close the modelspace window
Push the Restore button to retrieve the previous workspace state

Protecting materials will destroy modelspace standalone deformations

will clear undo history during backup and restore

Synchronize - Default aspect



submitted a version of protect workspace that does not require clearing undo history, fingers crossed

will clear undo history via Protect Workspace even if nothing is selected for protection

Active - indicates that the synchronize process is active

Period - controls how often the synchronization occurs

Time Span - debounce timespan which is useless for a timer controlled process

Start - opens a model view, shrinks the play range to keyframes of all the scene items, adds a SynchronizeCamera to the scene and sets the model and workspace to use the sycnhronize camera. The model view must not be open when pressing the start button.

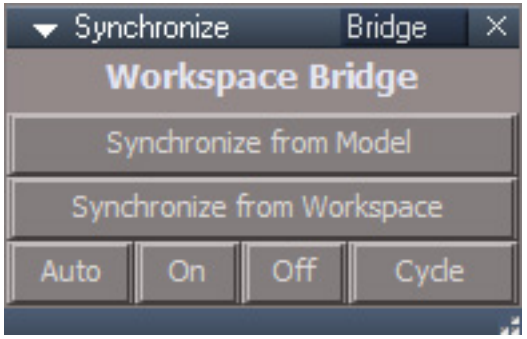
Stop - will open a dialog with a yes/no question. You must answer Yes or the process will not stop.

Synchronize Camera - adds a Synchronize camera to the scene, matches the camera to the active workspace 3D view and sets the open model view and the active workspace 3D view to use the camera.

The Protect Workspace settings section values will override the Protect Workspace node values. While the synchronize process is active.

Jump to Protect Workspace

Synchronize - Bridge aspect



Synchronize from Model is the same as turning the bridge Off then to Auto and automatically pressing the Content synchronization dialog button labelled "Sync from Model".

Synchronize from Workspace is the same as turning the bridge Off then to Auto and automatically pressing the Content synchronization dialog button labelled "Sync from Workspace". This script also fixes a bug in the trueSpace synchronize commands that causes objects to be renamed if more than one object is selected.

Off, On, Auto sets bridge switch value using buttons instead of the desktop panel dropdown. The operation is the same as the dekstop panel versions except it will not run if more than one object is selected in order to bypass the trueSpace synchronize bug.

Cycle is the same as setting the bridge switch value to Off and then Auto. This will not run if more than one object is selected.

The trueSpace synchronize bug presents itself if more than 1 object is selected when the bridge synchronize from workspace is run. The selected objects will be renamed to include a comma and number postfix. Each time the synchronize is run the number will increment. The reason for the bug is that when more than 1 object is selected in modelspace it will create a temporary Selection group object to hold the objects. Workspace cannot see the modelspace Selection object.

One thing you might want to mention about Synchronize, it is a Camera and it is necessary to be viewing from this camera from within Workspace & Model for synchronization
Adding objects from Workspace after Activating the Synchronize camera will not be Protected

New Synchronize2 ?
wait before final update of these pages

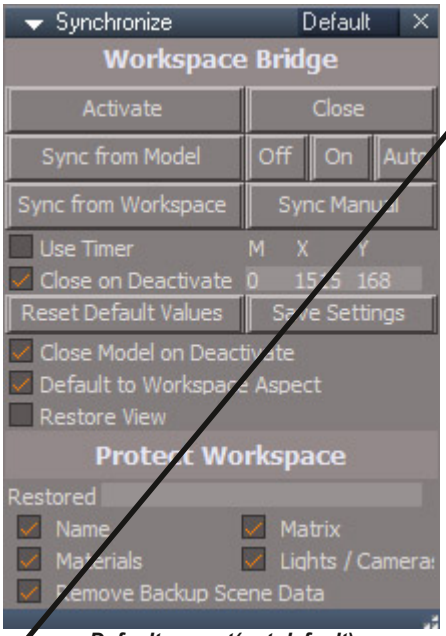
To render workspace animations from Model all the animated items need to be selected first. Also since synchronize depends it's own camera it may be that you can only use this camera the render the animation. That's no good, this "camera" is set to disappear by default at the end of the sync, can't animate that.

Good test shows you can change the Model view to another camera and it will still sync - verified it works. So you don't have to be viewing from the camera to synchronize as stated in red over there.

New synchronize camera button was added

Lost some notes somew animation from model y to file using the Animat need to turn off model a

Workspace aspect(default)



Default aspect(not default)

Changes in the workspace view are not reflected in the modelspace view. You can move an object in modelspace and the same object will follow in workspace, but if you move the same object in workspace, modelspace will not follow. The Synchronize script makes modelspace follow the workspace changes. With synchronize active it is possible to render a workspace animation from inside modelspace and to combine workspace and modelspace animations into one render.

When the Deactivate is run undo history will be erased.

Rendering with synchronization in a floating model view may destabilize trueSpace. It is recommended to render with the main docked 3D view as the model view.

Workspace aspect

Activate will link workspace changes to modelspace. If a Model view is not open, Activate will open a new Model view. A 3D workspace view must be open before activating the synchronization.

Deactivate or **Cancel** will stop the synchronization, close the modelspace view and close the synchronize panel.

Workspace is the true default mode and runs in 100% automatic mode. Pressing any button in the Workspace Aspect will change the run time values to Workspace aspect default values. If you make changes in the Default aspect do not press any buttons in the Workspace aspect or you will lose your changes.

Default aspect

To set the Default aspect as the default behavior mode takes the following steps:

1.Switch to the Default aspect
2.Uncheck Default to Workspace
3.Press the Save Settings button to make the change permanent

To make workspace the default check Default to Workspace and press Save Settings to make permanent.

Activate will open a new 3D view or use an existing 3D view, convert it to a modelspace view and modelspace will become aware of workspace changes.

Deactivate will stop the synchronization, close the modelspace view and close the synchronize panel.

Close will close the synchronize panel.

Sync from Model is the same as turning the bridge Off then to Auto and automatically pressing the Content synchronization dialog button labelled "Sync from Model".

Sync from Workspace is the same as turning the bridge Off then to Auto and automatically pressing the Content synchronization dialog button labelled "Sync from Workspace".

Off, On, Auto sets bridge switch value using buttons instead of the desktop panel dropdown .

Sync Manual is the same as setting the bridge switch value to Off and then Auto .

Use Timer is for synchronizing workspace physics and procedural animations.

Close on Deactivate when checked will close the panel after the Deactivate button is pressed. The tool can be run more than once if this option is turned off.

Reset Default Values sets all controls to the Workspace aspect(default) automatic run values. It also resets it's internal camera parameters. ⓘ *This will clear the undo history.*

Save Settings saves the settings used in the default aspect.

Close Model on Deactivate when checked will close the modelspace view after the Deactivate button is pressed. The tool will not close an open modelspace view if this option is turned off.

Default to Workspace Aspect when checked will make the workspace panel the default.

Restore View when checked will restore the workspace 3D view to the state it had before synchronization.

protect workspace settings section values will override the protect workspace node values.

Jump to Protect Workspace

Workspace copy, erase, undo and redo are missing from the workspace portion of the original manual.

2.7.6a Copy and Erase

Copy LMB creates a copy of the selected object(s) and arrange the new nodes in the link editor.
RMB old behavior of only copy the first selected item

submitted a version that will use less undos (current is 47 undos for each object)

Erase LMB will erase the currently selected object(s) and compensates for NURBS objects. It also formally deselects to fix a ghost selection bug (tS thinks the objects still exist).
RMB old behavior, no compensation for NURBS objects or ghost selection fix

2.76b Undo and Redo

Undo

Redo

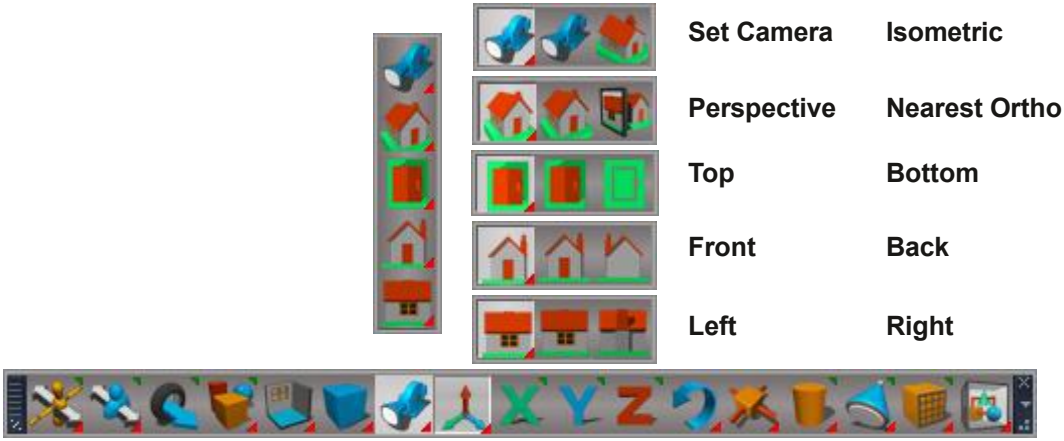
The Undo tool (CTRL+Z keyboard shortcut) reverses the last operation performed on an object. This makes it easy to try things out in trueSpace and quickly undo something that did not work out the way you planned.

If you Undo something and then change your mind, you can use the Redo icon.

Each of these tools can store multiple levels of actions. If you wish to undo the last 4 actions you performed on your object, selecting Undo 4 times will bring you back to where you were prior to those actions. If you wish to redo the changes you just made, 4 clicks on the Redo icon will restore all the changes.

2.7.7 Perspective and Orthogonal Views

You can switch the view type from perspective projection to special orthogonal projections like top-view and front-view by clicking on the appropriate icons on the Workspace tool bar.

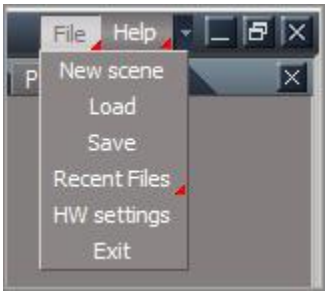


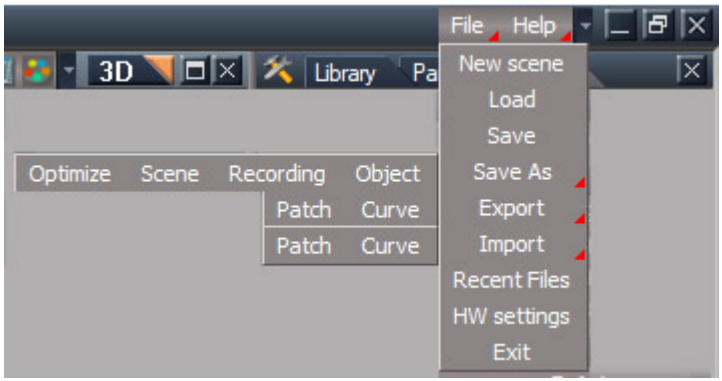
Switching the view to a different type

Unofficial Update Bottom Toolbar

In the Unofficial Update the camera view is separate from the other views.

2.7.9 Workspace File and Help Menu

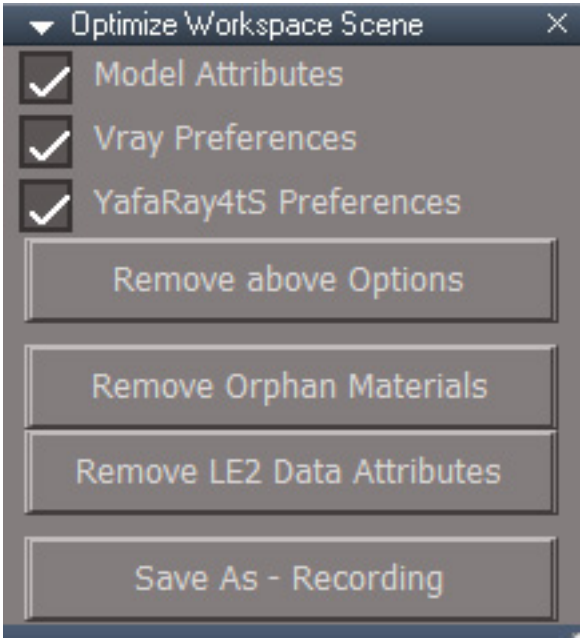




Unofficial Update File Menu

Save As > Optimize

Opens the Optimize Wokspace Scene panel used to clean the scene before saving as a recording file.



Model Attributes - setup to remove connectors added to the scene and scene objects from modelspace, also setup to remove Layer Info and PhotoRender nodes from the scene.

Vray Preferences - setup to remove Vray and PhotoRender nodes from the scene. Safe to use if you did not use Vray rendering for your scene.

YafaRay4tS Preferences - setup to remove the YafaRay4tS node from the scene. Safe to use if you did not use YafaRay rendering for your scene.

Remove above Options - executes the removal setup in the previous checkboxes

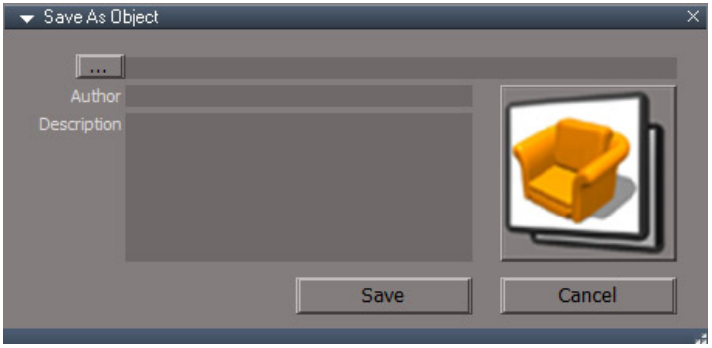
Remove Orphan Materials - If a mesh has multiple materials applied to it and the Separate Selection tool is used all the materials are copied which can result in orphan material nodes and connections.

Remove LE2 Data Attributes - some scene items seem to have excessive numbers of LE2 Data connectors.

Save As - Recording - save the scene as an RsRcd file type. This has all the same information as a scene file but takes up much less file space

Save As > Scene file save as dialog with RsScn file extension as the only choice. More direct and convenient than using Save.

Save As > Recording save the scene as an RsRcd file. This format has a smaller file size than the default RsScn file format without any apparent lose of data.

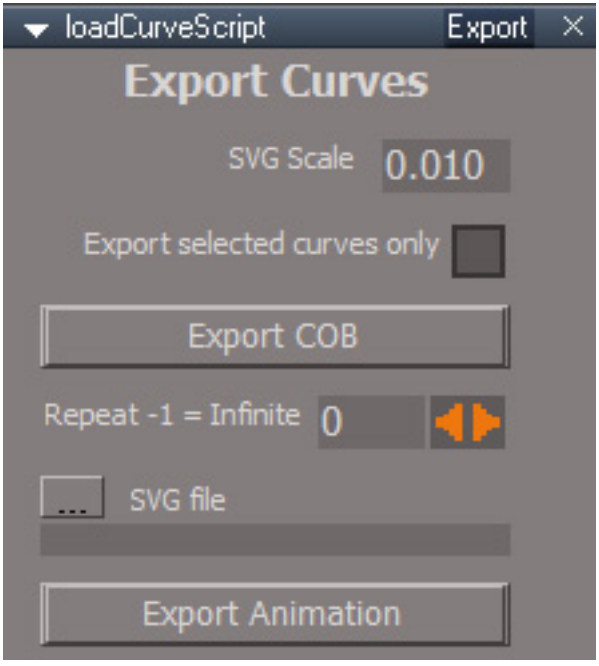


Save As > Object save object file, RsObj, with extra information

... button to choose a file name

Author and **Description** optional information to add to the file

Save button to write the file to disc



Export > Curve

SVG Scale - default of 0.01 corresponds to 1cm in trueSpace translates to 1pixel in the svg file

Export selected curves only - don't export a curve unless it is part of the selection.
All curves in the scene will export when unchecked.

Export COB - save in truespace modelside compatible ascii format(COB). Only curves will be exported.

Repeat - how many times to play the animation in the html file. A value of -1 means infinite repeats.

SVG file - input file to use when generating the sample html file

Export Animation - save html and CSS animation files to be used with the SVG file. Saves translation, rotation, scale and opacity(transparency) animations. Only animated items will export.

Open the html file to see the animation in a browser. The html file will have the same name as the css file created.

Import > Curve

Load curves from trueSpace scn and cob files generated from the modelside or earlier truespace versions. It also reads bezier curves from turbocad dxf files and svg format files. Most of the import options are for svg format files.

SVG Scale - default of 0.01 corresponds to 1cm in trueSpace translates to 1pixel in the svg file

Z Offset - each curve will be offset in the z direction by this amount

Import svg ellipse as polygon - imports ellipses or circles and converts them polygon meshes

Import svg line as polygon - lines and polylines imported as triangles each with only 1 edge visible

Import svg path as polygon - import curves and convert them to polygon meshes

Import svg rectangle as polygon - import rectangles as curves and convert them to polygon meshes

Close svg curve with a line - add a line from the end to the beginning of closed curves - option is only valid with non-polygon import

Seperate svg sub-paths - splits compound paths into distinct curves

Preserve svg groups - if unchecked will ignore groups that have no transform values

Show polygon edges - items converted to polygon meshes will have edge visibility turned on

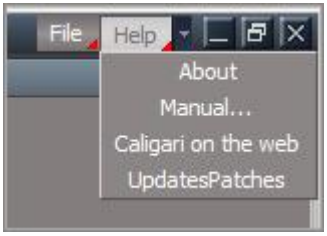
Flip path - reverses the direction of the curve resulting in a flipped normal for the polygons. not very useful since curves can go either way

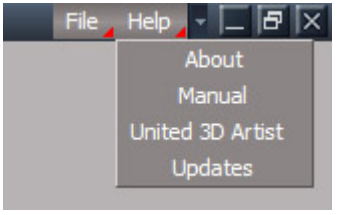
Constant color - use a constant color material for curves imported as polygons

Import - press to load a curve file.

Export > Patch save a NURBS patch as an ascii format cob file, the first selected object will export.

Import > Patch load a trueSpace cob ascii format file that contains NURBS patches





Unofficial Update Help Menu

Help: About

This displays the trueSpace splash screen with the programming credits, the version information, and the display mode in which trueSpace is running. The Unofficial Update version first shows a popup dialog with version information.

Help: Manual

This will take you to the contents page of the PDF version of the manual you are reading now.

Help: United 3D Artist

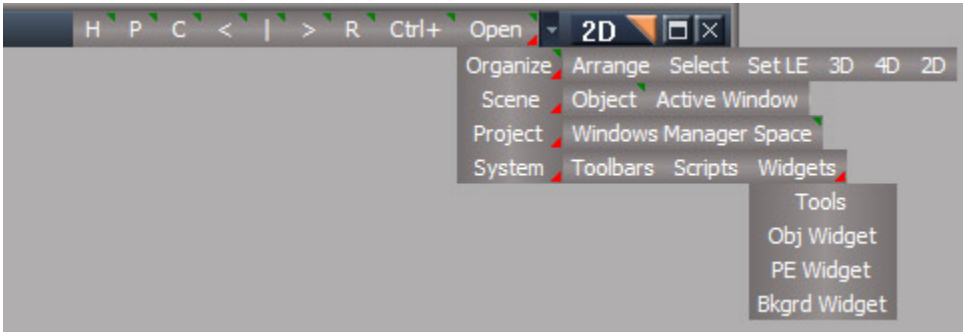
Open a web browser to the United3DArtists forum.

Help: Updates

Open a webbrowser to the United3DArtists trueSpace Unofficial Updates sub forum.

2.8 2D View – Link Editor

2.8.1 Link Editor Description



Unofficial Update Link Editor Mini Toolbar

Mini Toolbar

H : (3D View) LMB hide unselected, RMB show all

P : LMB select parent(owner) node, RMB open selected node in the link editor

C : LMB select first renderable child node, RMB open selected node in the link editor

< : LMB select previous renderable sibling node, RMB open selected node in the link editor

| : LMB center the selected node in the view, RMB select next renderable sibling node in the link editor and center it

> : LMB select next renderable sibling node, RMB open selected node in the link editor

R : (3D View) LMB start rectangle select tool, RMB open options panel

Ctrl+ : LMB simulate ctrl button press and hold, LMB again to end ctrl button behavior, RMB deselect

Open : RMB open the link editor to the scene

Organize : LMB minimize nodes and arrange, RMB maximize nodes and arrange

Arrange :

Select : open the Select and Alphabetize panel (see next page)

Set LE : set the currently active link editor window as the window to receive link editor commands


will clear the undo history.

3D : switch active window to a 3D aspect

4D : switch active window to a 4D animation aspect

2D : switch active window to a 2D link editor aspect

Scene : open link editor to the scene

Object : open link editor to the selected object

Active Window : open link editor to the active window

Project : open link editor to the project

Windows Manager Space : open link editor to the windows manager space

System : open link editor to the top level root

Toolbars : open link editor to the toolbar prototypes encapsulator

Scripts : open link editor to the scripts

Widgets : open link editor to the active widgets

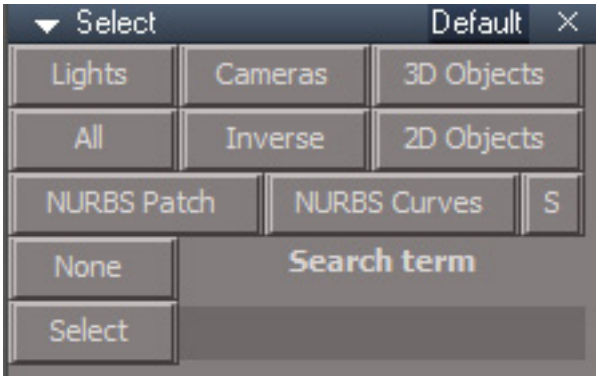
Tools : open link editor to the widgets tools

Obj Widget : open link editor to the object navigation widget

PE Widget : open link editor to the point edit navigation widget

Bkgrd Widget : open link editor to the background widget

Select



Default aspect

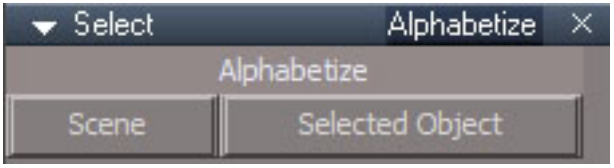
Select items based on their common characteristics.

By object type: Lights, Cameras, 3D Objects, 2D Objects, NURBS Patches and Curves.

Modify selection: All, None, Inverse. S=NURBS control point mesh.

Name matching: Enter a search term in the text input field and press the Select button. The search is case insensitive and the search term will be found at the start, end or in the middle of the object name..

ⓘ The 3D Objects button does not include NURBS Patches and Curves



Alphabetize aspect

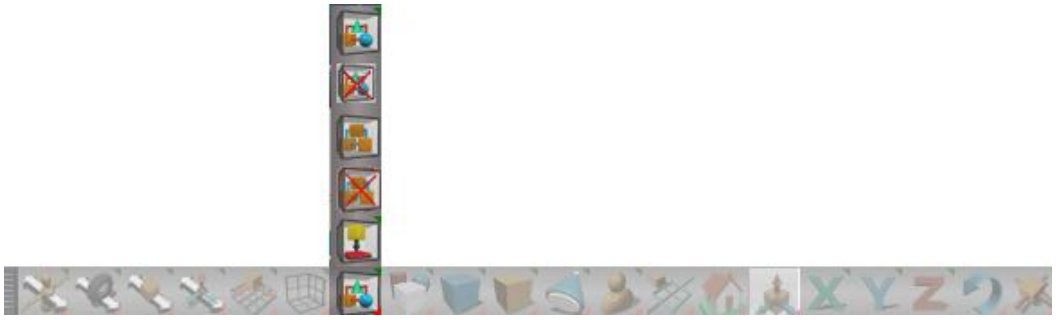
Place the objects in alphabetical order by a delete and restore process.

Scene : Alphabetize the scene.

Selected Object : Alphabetize the nodes inside the selected object.

2.8.5 Encapsulating Objects

Bottom Toolbar



Unofficial Update Bottom Toolbar

Encapsulate Objects

Unencapsulate Objects

The Unencapsulate tool, breaks a group apart.

Encapsulate in 3D

Unencapsulate in 3D

The UnEncapsulate In 3D tool breaks a group apart and cleans up extra nodes that were used by the 3D group.

2.12 Other Views

Stack Toolbar

Make copy of Window

3D Window

Link Editor

Command Prompt

Command History

Output Console

Status View

Stack View

Anim View

Package Manager

Scene View

Unofficial Update Stack Toolbar

Stack View - (bug) will close the stack view, not open it. The stack view can be reopened by layout change or reset default context.
This button has been removed from the Unofficial Updates.

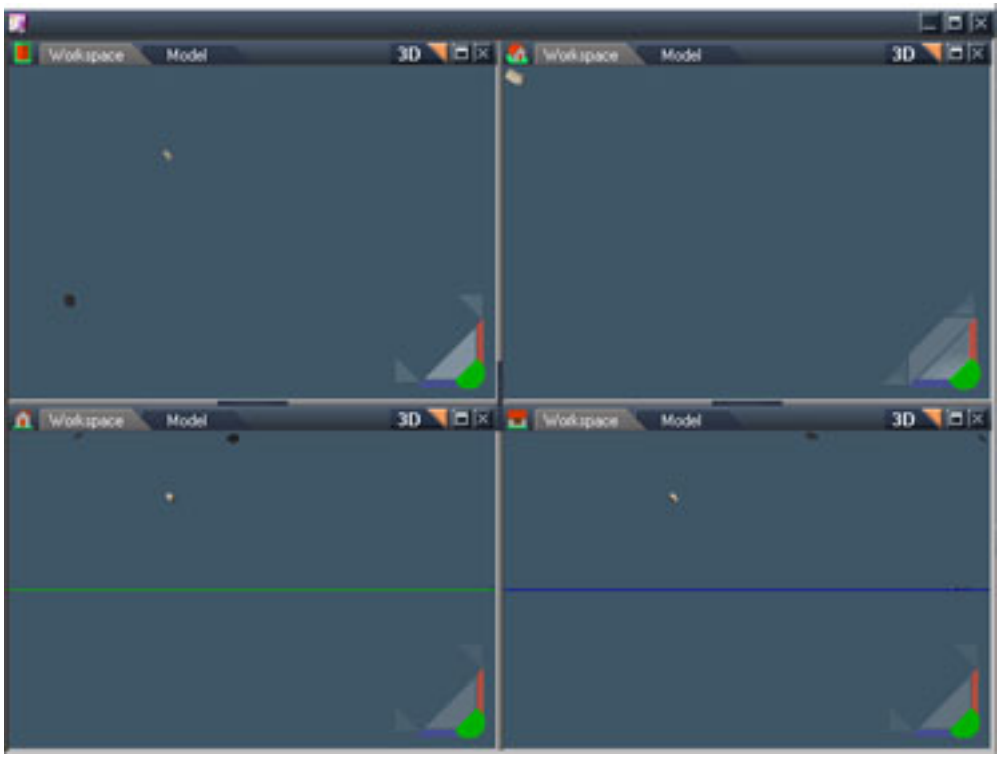
Make copy of Window - LMB runs original command and then cleans up the result
RMB original command

LMB will clear the undo history when run on 3D and 2D windows.

3D Window - RMB - original command plus adds Scene & Postprocess nodes

Link Editor - RMB - original command plus adds Link Editor toolbar and sets the window as the active LE window for the toolbar.

3D Window RMB and Link Editor RMB will erase undo history.



Quad Window

Opens a viewport composed of 4 3D windows in a 2 by 2 arrangement. RMB Saves Quad Window user modifications

2.13 Macro Recording and 3D Recording

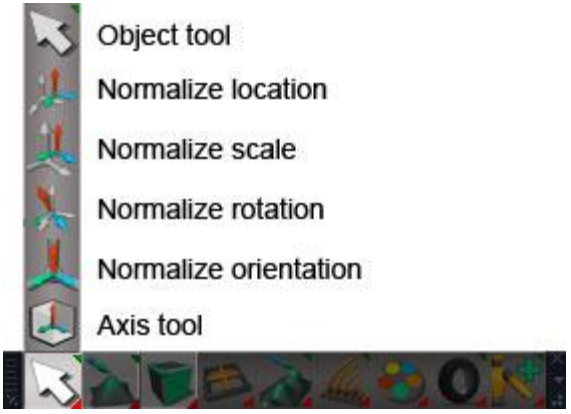
2.13.1 Macro Record

Macro Record – jScript. RMB create a blank jscript command node in the scene.

Macro Record - VBScript RMB create a blank vbscript command node in the scene.

Chapter 3 MODELING - Workspace

3.1 Object Tools



3.1.1 Object

The Object tool is used to select an object. Once an object has been selected, the remaining object tools can be used. Choose the Object tool and left click on an object in the Workspace to select it.

If a subobject at any level of a scene object is currently selected, the top most scene level object will be selected.

3.1.6 Axis Tool

RMB toggles showing the axis in front and in back of the object.

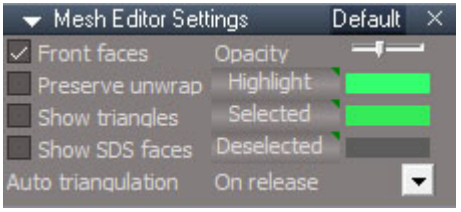
3.2.0 Mesh Editor Settings

There are many options and settings that will control how Point Edit works, adjusting everything from the colors used in making a selection, to how certain tools work. This section details those options before we get into looking at the tools themselves. Where the options apply to a particular tool, you will find them repeated under that tool"s description.

The Default aspect

This aspect is shown on activating Point Edit mode.

The Default aspect of the Mesh Editor Settings panel.



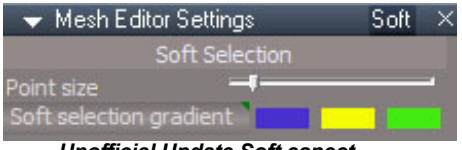
Unofficial Update Default aspect

Highlighted, Selected, Deselected – RMB reset buttons.

The Soft aspect

This aspect must be selected manually. This section is repeated under the Soft Selection tool write up.

The Soft aspect of the Mesh Editor Settings panel.



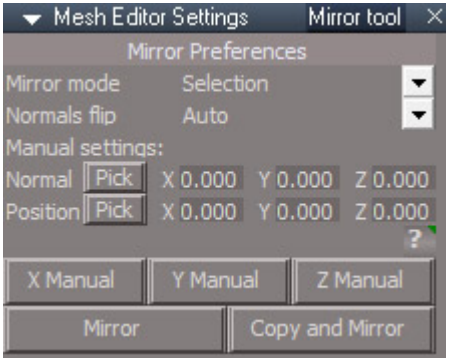
Unofficial Update Soft aspect.

Soft Selection Gradient – RMB reset gradient colors

The Mirror Tool aspect

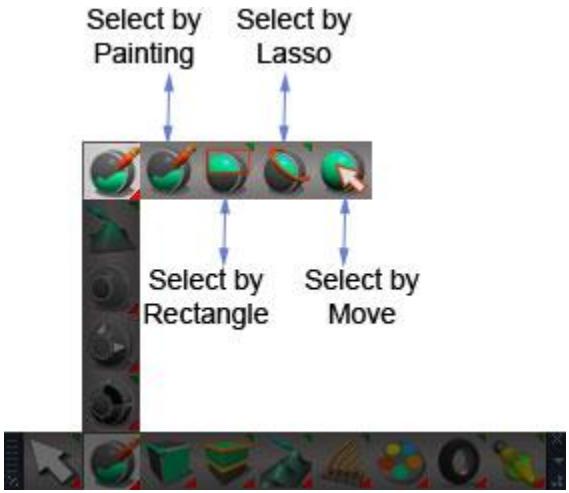
This aspect can be selected manually, or opened with a right click on the Mirror Tool. This section is repeated under the Mirror Tool write up. Note that these settings apply solely to the Mirror Tool, and not the Mirror Modeler.

The Mirror Tool aspect of the Mesh Editor Settings panel.



Unofficial Update Mirror Tool aspect.

- **X Manual** – Sets mode to Manual, sets Normal to 1,0,0, sets Position to 0,0,0
- **Y Manual** – Sets mode to Manual, sets Normal to 0,1,0, sets Position to 0,0,0
- **Z Manual** – Sets mode to Manual, sets Normal to 0,0,1, sets Position to 0,0,0
- **Mirror** – run the mirror on the selection
- **Copy and Mirror** – copy the selection and then mirror



The basic selection tools for Point Editing.

3.2.1 Select By Painting

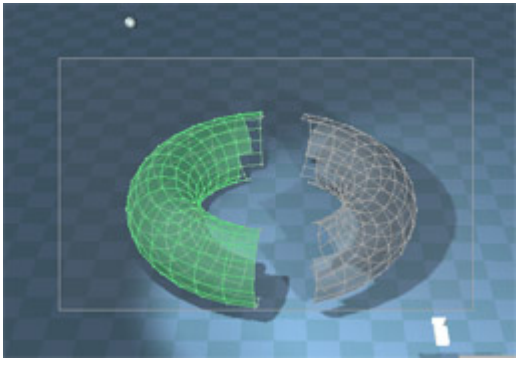
RMB sets to context mode and front faces.

3.2.2 Select By Rectangle

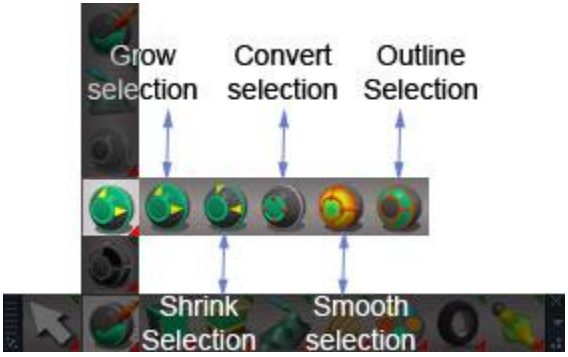
Connected – RMB panel, This checkbox determines if the selection is allowed to select other object"s elements or not.

3.2.3 Select By Lasso

Connected – RMB panel, This checkbox determines if the selection is allowed to select other object"s elements or not.



Connected active, only 1 part can be selected at a time.



The main selection modifier tools

3.2.11 Grow Selection

The Grow Selection tool first converts the current selection to vertices, and then expands the selection to include surrounding neighbor vertices and finally converts the selection to use the current point edit selection mode.

The original version of the tool did not convert the vertex selection back to the point edit selection mode.

3.2.12 Shrink Selection

The Shrink Selection tool first converts the current selection to vertices, and then shrinks that selection by removing the outer vertices and finally converts the selection to use the current point edit selection mode.

The original version of the tool did not convert the vertex selection back to the point edit selection mode.

Select Plane Loop

More Information

Select by Normals

More Information

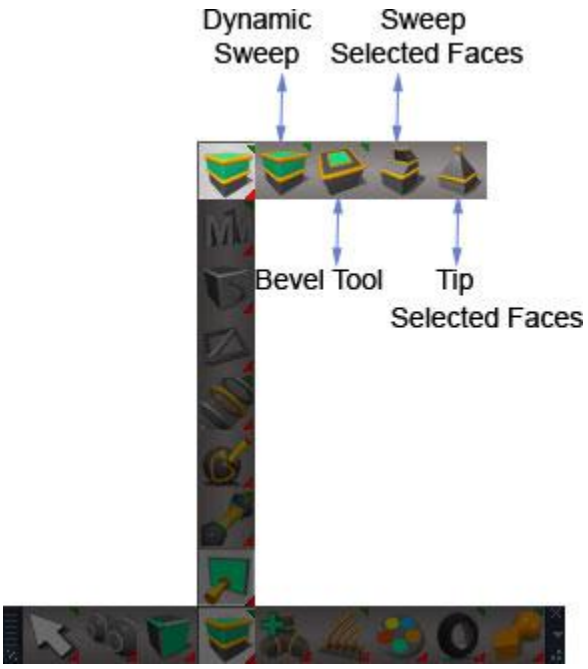
3.2.17 Hide Unselected Geometry

This hides the unselected elements, so that the selected elements are the only ones that remain visible, and are the only ones that can be selected and edited. This is useful for focusing work on a particular area of an object, without the distraction of other elements being visible in the scene.

The original manual has the wrong button image

3.4 Sweep, Draw, Topology Tools

The Point Edit tools allow you to perform tasks on your mesh to change the geometry. These tools are used in conjunction with the Select and Context Point Edit tools to provide you with essential mesh-editing tools. The Point Edit Operations tools are as follows:

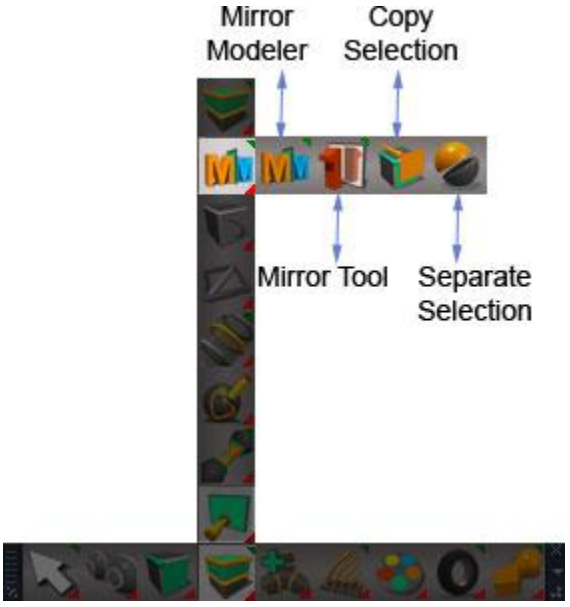


The sweep, bevel and tip tools, are explained below.

Lathe *More Information*

Static Sweep *More Information*

True Bevel *More Information*



3.4.5 Mirror Modeler

Mirror Matrix

Mirror Matrix - opens the mirror matrix panel

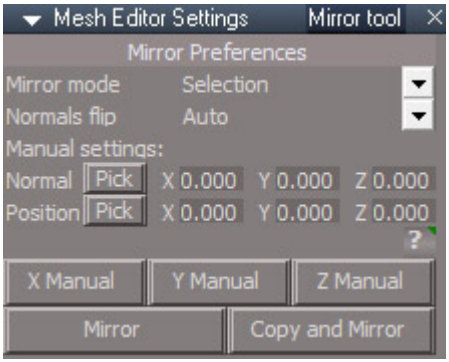
More Information

3.4.6 Mirror Tool

The Mirror Tool allows you to make a selection of elements on an object and Mirror that selection. If no selection of elements is made, the entire object is mirrored across the x-axis.

The Mirror Tool has some options associated with it. These can be selected manually in the Mirror Tool aspect of the Mesh Editor Settings option panel in the stack, or opened with a right click on the Mirror Tool.

The Mirror Tool aspect of the Mesh Editor Settings panel.



Unofficial Update Mirror Tool aspect.

jump to Mirror Tool panel

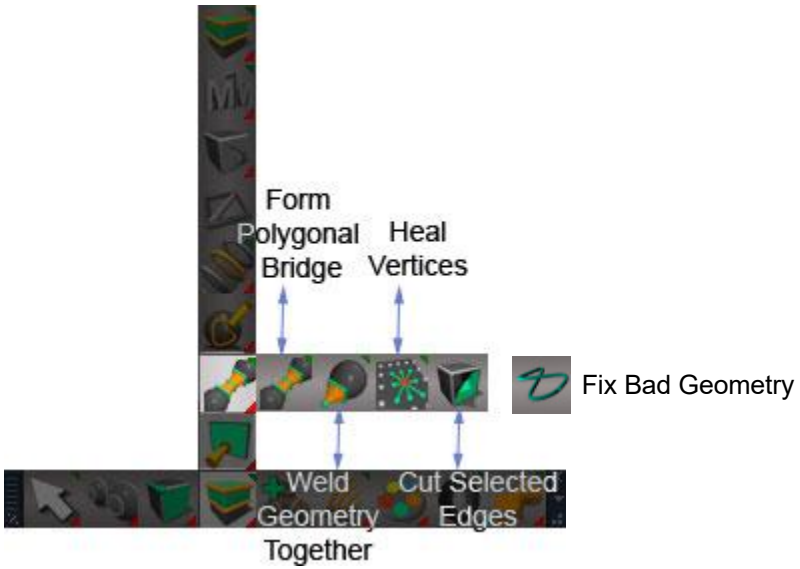
3.4.21 Add Polygons

The Add Polygons tool allows you to create a polygon on existing geometry. You can begin on an existing edge or vertex, or start in the middle of an existing face.

Information missing from the original manual

To modify the position of a previous drawn vertex simply drag it to the desired location.
To remove a vertex while drawing, move it to another vertex. This looks slightly cleaner when the other vertex does not share a line segment with the point being removed.
The tool will snap to edges and vertices even when snapping is disabled.

The regular snapping and constraint tools can be used with the add polygon/edge/point tools.
The snapping can be locked to an edge by holding the shift key. To lock movement perpendicular to the current snap location on the edge hold the shift and ctrl keys.

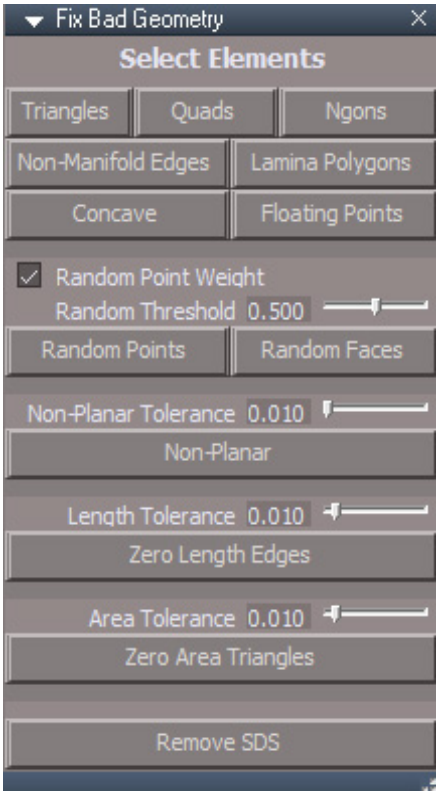


3.4.27.a Fix Bad Geometry

This is a collection of tools to help fix bad geometry. It can be used for example to create a selection based on mesh characteristics such as side count, planarity and whether it has non-manifold edges. The only direct fixing tool is used to remove corrupt SDS geometry that can occur inside trueSpace. It also includes some random selection tools that can be used for artistic purposes.

Target Weld

More Information



Triangles - select 3 sided polygons

Quads - Select 4 sided polygons

Ngons - select polygons with more than 4 sides

Non-Manifold Edges - select edges that joins more than 2 polygons

Lamina Polygons - select polygons that share all the same vertices

Concave - select concave polygons

Floating Points - delete points that have no edge connections

Random Point Weight - selected points will have a random weight value

Random Threshold - percentage of elements to select, 0.5 would be 50%, 0.9 would be 90%, note that the slider goes with the Random Threshold value, not the Random Point Weight

Random Points - select random points

Random Faces - select random faces

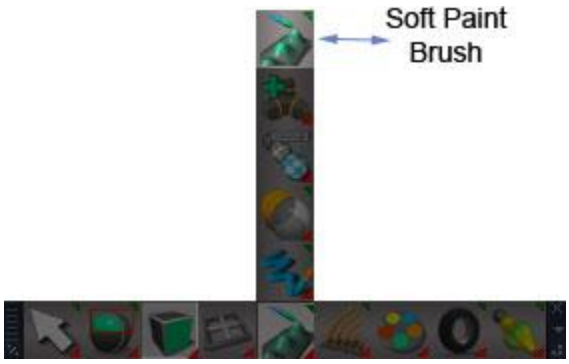
Non-Planar - select polygons that are not flat using the **Non-Planar Tolerance** to determine maximum polygon bending

Zero Length Edges - select triangles that have a zero length side with the zero being defined by the **Length Tolerance**

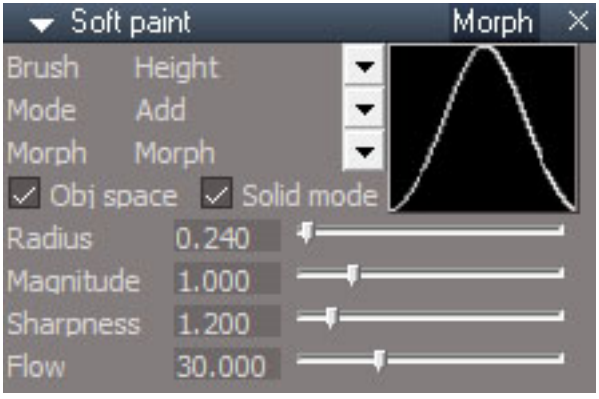
Zero Area Triangles - select triangles that are very small with small defined by the **Area Tolerance** value

Remove SDS - removes a bad SDS from a mesh so it can be reapplied

3.5 Soft Paint



Information missing from the original manual



Soft paint has a morph mode to paint one morph into another. Once the morphs for the mesh are created, activate a morph, then start the soft paint and choose Morph aspect of the panel. Choose the source morph in the Morph dropdown list and start painting. The source shape will be used to alter the current morph.

3.11 Flatten History

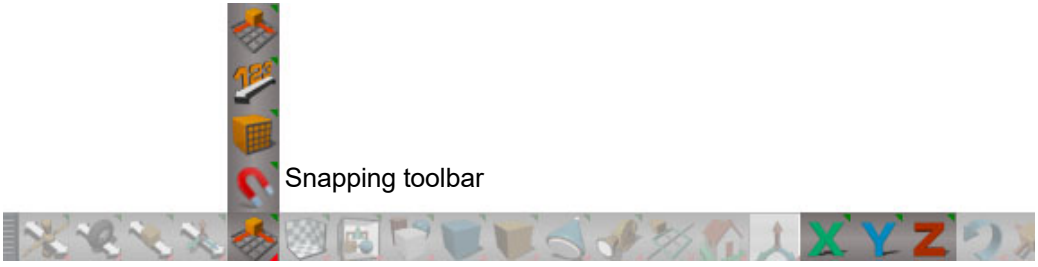
The location of the Flatten History tool

Unofficial Update location of the Flatten History tool

RMB flattens history and removes UV connectors

3.12 Snapping and Distance Tools

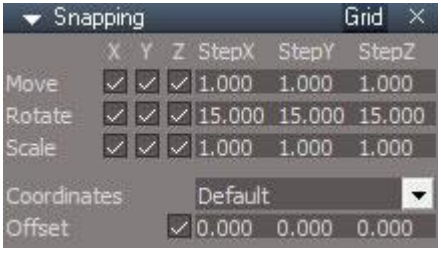
The location of the snapping tools



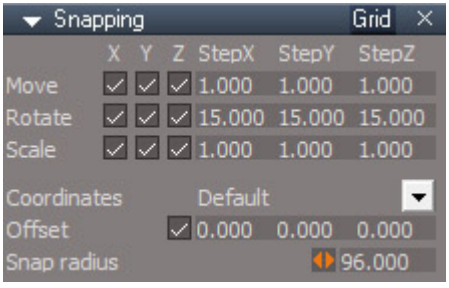
Unofficial Update location of the snapping tools

3.12.1 Grid Snapping

Grid Snapping lets you control whether edits to an object‟s position, rotation or size happen smoothly, or whether they snap to preset values and amounts.



The Grid Snapping options panel.



Unofficial Update Grid Snapping options panel.

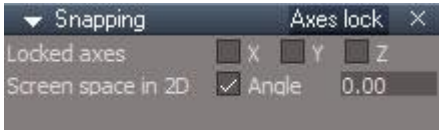
Snap radius – This value controls how close to a snapping grid location you need to move before snapping will take place

3.12.2 Other Snapping Options

The Snapping panel has other aspects that let you control other options for snapping. These are listed below (except Dimensions, which is listed under the Distance Feedback Display section).

Axes Lock Aspect

This lets you lock out movement in certain directions, and control movement in the orthogonal views. Note that these settings affect movement even when Grid Snap is NOT enabled.



The Axes Lock aspect of the Snapping options panel.

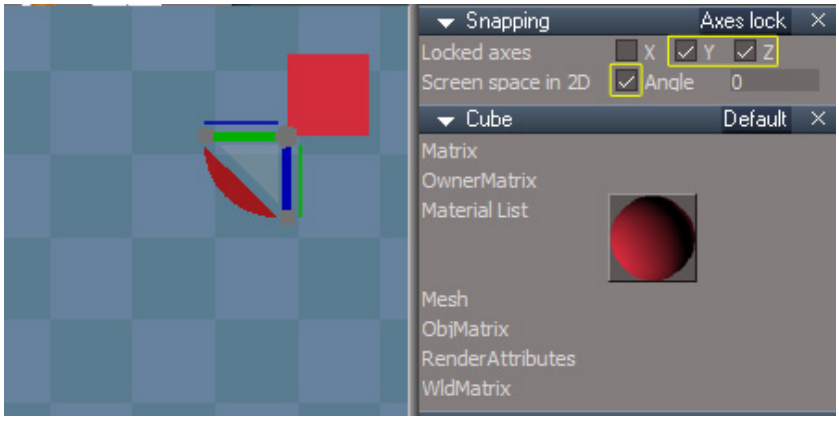
- Locked Axes – This locks changes in the X, Y or Z directions, and is the same as activating or deactivating the X, Y and Z locks on the main toolbar. Activating or deactivating these checkboxes will highlight or un-highlight the icon on the main toolbar, and using the icons on the main toolbar will check or un-check these parameters.

RMB open the Snapping Panel

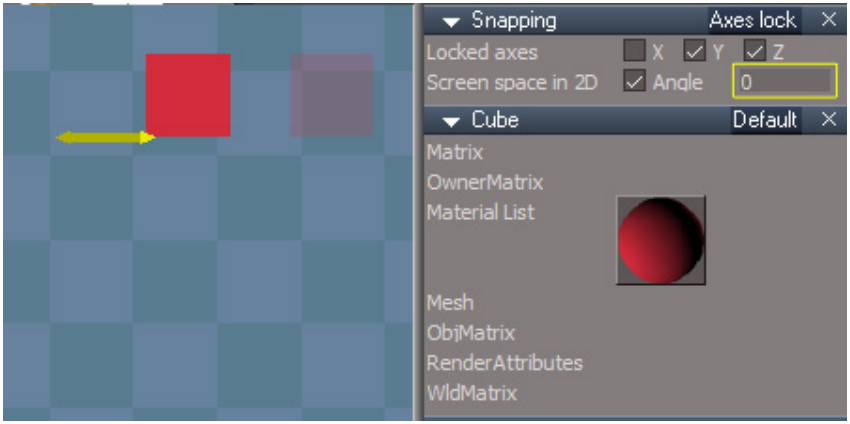
- Screen Space in 2D – This has an effect in the orthogonal views (top, front, side) only. When unchecked, the X and Y constraints apply to the world X and Y, meaning you may not be able to move the object in the X direction on screen from the angle you are looking at even if the constraint for X is not checked. When checked, then the X and Y constraints apply to the on-screen X and Y, irrespective of world X and Y, so that you would be able to move the object in the X direction on screen if it is not locked, even if that is the Y or Z direction in World space.

- Angle – When Screen Space In 2D is checked, this allows you to rotate the axis by an angle so that movement along an axis occurs at that angle.

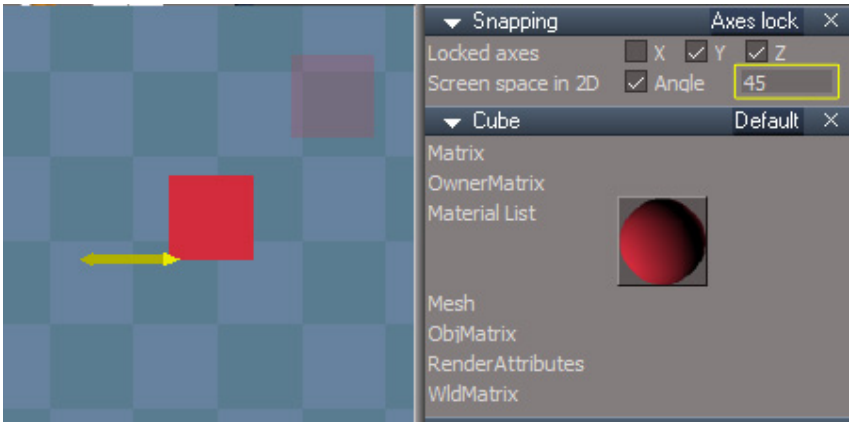
Images and text on next page have been altered for clarity in this manual



A cube viewed from the Top view, ready to move. Screen Space In 2D is checked, and all movement is constrained except along the X axis.



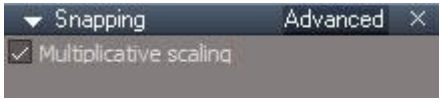
With an Angle of 0, movement occurs directly along the screen X axis, irrespective of what direction this might be in the World axis.



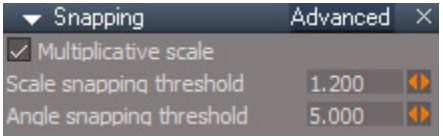
By setting the Angle to 45, clicking on the X movement axis of the widget this time moves the object along a line rotated 45 degrees.

Advanced Aspect

This aspect lets you control snapping with the Scale tool.



The Advanced aspect of the Snapping options panel.



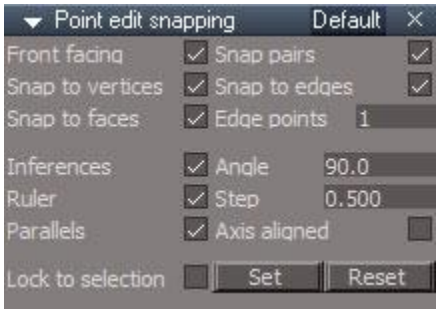
Unofficial Update Advanced aspect of the Snapping options panel.

- **Scale snapping threshold** – This value controls how much you must move before snapping will take place for scaling.

- **Angle snapping threshold** – This value controls how close to a snapping angle you need to be before snapping will take place

3.12.4 Point Edit Snapping

Point Edit Snapping works when in Point Edit mode, and allows snapping when you are moving vertices, adding edges and loops, etc.

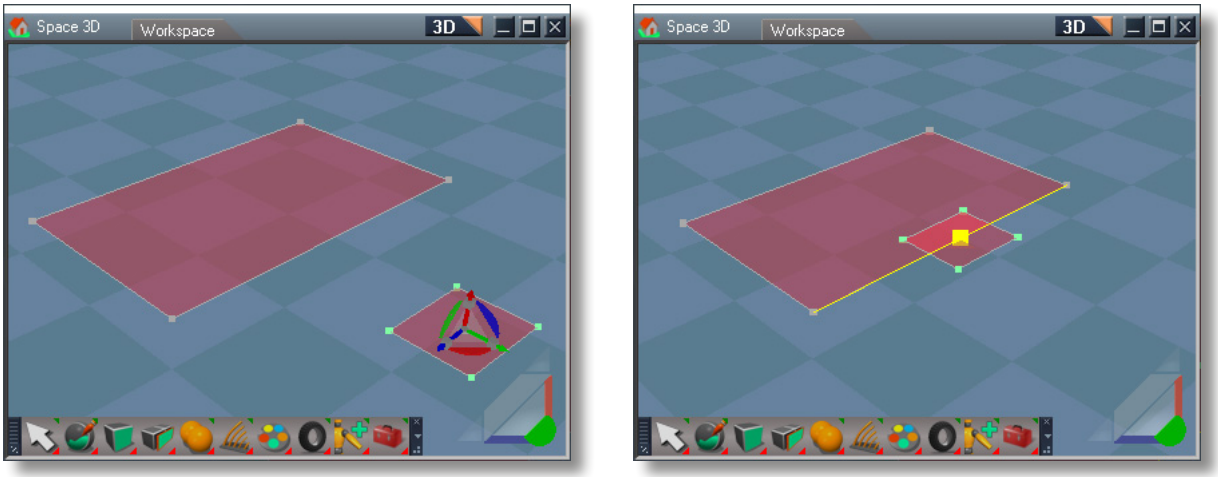


The Default aspect of the Point Edit Snapping options panel.

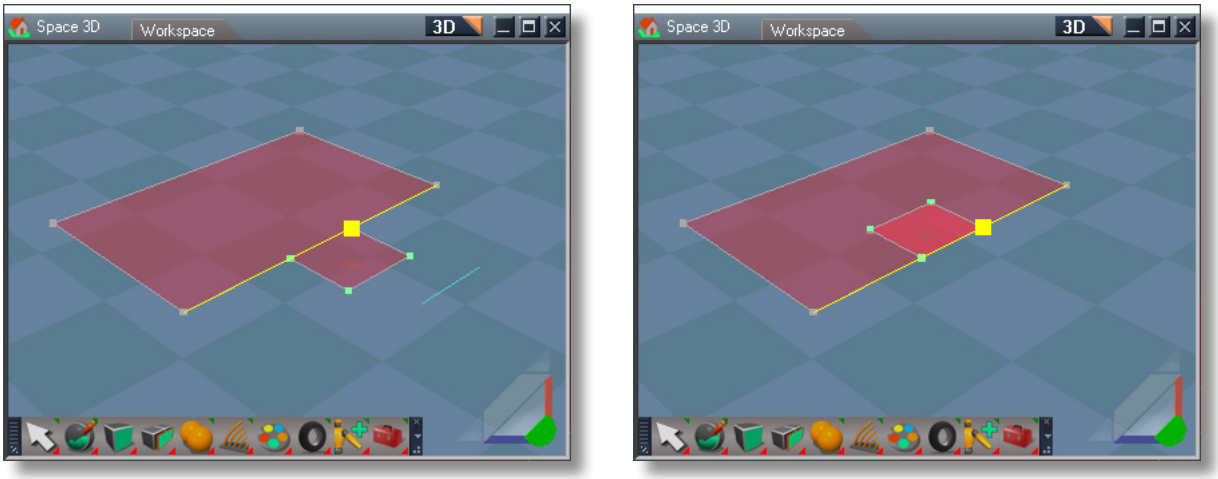
- Front Facing – Controls whether snapping is only done to front facing edges and faces (note that Snap To Vertices will be unaffected by this setting). When checked, snapping will only be to front facing elements, limiting snapping to visible elements facing the camera. When un-checked, snapping will work on elements that are not facing the current view, allowing snapping to faces and edges to apply to back faces on an object, etc.

- Snap Pairs – This parameter takes effect when you are working with selections of more than one element. If this is checked, then snapping occurs when any of the vertices in that selection gets close to a snapping point. If this is unchecked, then snapping only occurs when the widget for the selection gets close to a snapping point.

An example is shown below. The snapping point shows as the yellow spot which snaps to the edge which is also yellow when snapped to.



The initial set up has four vertices selected for moving (left). With Snap Pairs disabled, only the widget will snap, as can be seen clearly when we cross over the existing edge – the first two vertices do not cause a snap, only when the widget nears the snapping point does snapping take place (right).



When Snap Pairs is enabled, the vertices themselves snap to the edge, resulting in two different snaps. The first occurs when the first set of vertices near the snapping point (left), and then the selection snaps again when the other vertices near the snapping point (right).

Lock to Selection –This option lets you constrain editing in Point Editing to particular directions. For example, if you set a lock based on a polygon, then you will only be able to move points in the plane defined by that polygon (ie, in 2 directions), or if you set a lock based on an edge, you would only be able to move points in the direction defined by that edge.

Once you have checked this option, you will need to make a selection on your object, and then use the Set button to define the lock (or you can use the Set button first, and then check this box).

Lock to selection - extra information

To use the tool, in point edit mode select a face, two faces or an edge.

- When selecting a face, movement will be constrained to a direction parallel to that face. This will be visualized by showing 2 arrows from the face center.
- When selecting two faces, movement will be constrained to the edge defined by the intersection of the two planes. If the 2 planes are parallel then 1 plane will be ignored for the locking.

Vertex Aspect

Error from the original manual

2D Snap – When checked, snapping will only occur to snapping points on the current face beneath the mouse pointer. When unchecked, snapping can occur to any snapping points beneath the mouse pointer, even those on a back face, so long as it is within the Snap Distance. This parameter is checked by default.

2D Snap means that the 3D arrangement of the elements are ignored for snapping and only their distance in screen space is used. Unchecked and items have to be near each other in 3D space to snap.

Missing from the original manual

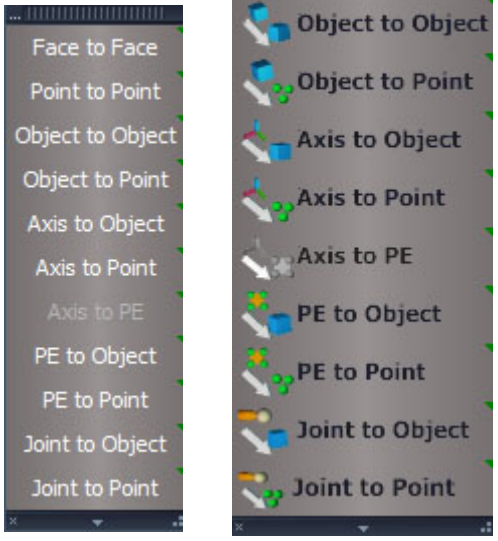
The snapping can be locked to an edge by holding the shift key. This also displays a guide line. When the guidline is active you can lock movement perpendicular to the current snap location on the edge by holding the shift and ctrl keys. This perpendicular locking only works when moving along an edge connected to the vertex that is moving. If you have enabled edge points and you snap to edge, snapping positions will also be evaluated outside that edges end points.

If you snap to a face not connected to the selected element and hold the shift key the snapping will lock to the face. This can be most easily be seen when using the Select by Move tool instead using of the point edit widget. When using the point edit widget it will constrain to a line on the plane. Shift and control together do not move perpendicular to the face.

Inferences only work on perfectly flat faces.
Inferences are useful when used with the drawing tools for polygons and lines and also may be useful for moving some elements around on a flat surface like after a bevel insert.

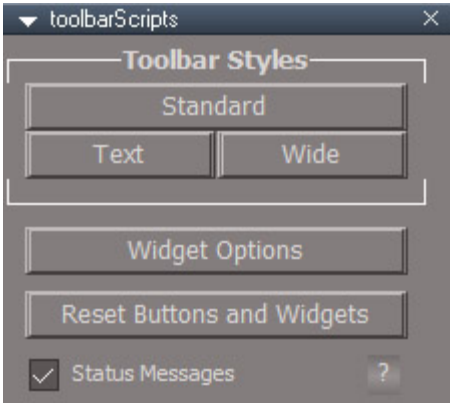
Snapping Toolbar - Open Snapping Toolbar.

Snapping Toolbar – standard style



Snapping Toolbar – text and wide styles

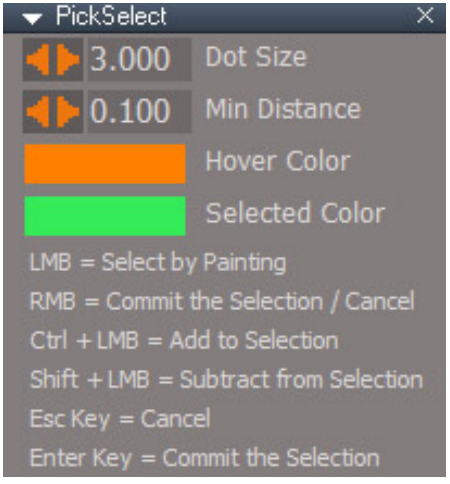
Standard - square icon buttons
Text - text based buttons
Wide - icon plus text



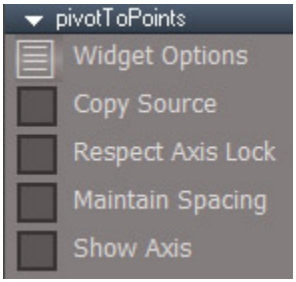
Snapping Toolbar Options

Widget Options - set hover and selected colors and dot size
Reset Buttons and Widgets - clean out of sync widgets
Status Messages - if unchecked status messages do not show. Recommend leaving this checked.

The Reset Buttons and Widgets is used as a safety net to clean the user interface. It will deactivate any picking widget, clear the button highlighting, clear mesh highlighting effects and clear the status line.



Widget Options



Snapping Tools Options

Widget Options is the same thing as the Pick Widget Options of the toolbar button.

Copy Source makes a copy and snaps it to the target selection and the widget stays active to continue copying to new target selections.

Respect Axis Lock uses the state of axis locking to restrict the movement of the snapped selection.

Maintain Spacing will snap the selected items as a fixed group instead of individually snapping each to the target selection

Show Axis option to flash the axis after it has been snapped

General Usage:

Select the objects/elements to be snapped
Press one of the snapping buttons
Select the destination objects/elements
RMB to commit the selection and move the original selection to the center of the target selection

The Face to Face and Point to Point snap tools do not use the current selection and start by deselecting everything.

If the Copy Source option is active RMB will snap move then reselect the source and wait for another target selection.

The Copy Source option can be confusing when used with axis snapping because no visible change occurs.
Object picking selections process uses 2 widgets so there are 2 cancel processes. Before any selection RMB will cancel. After an object is selected RMB the center sphere of the widget to cancel.
Joints should be in Shape Skeleton mode for selection.

Face to Face - Move and rotates one object to another based on triangle face selections.

Point to Point - Move one object to another based on point selections.

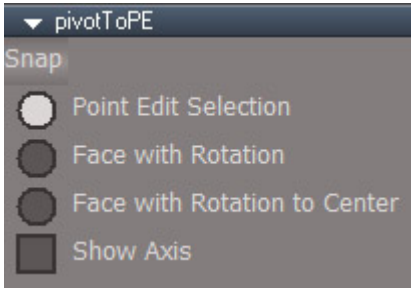
Object to Object - Move an object selection to the center of a target object selection.

Object to Points - Move an object selection to a target vertex selection center.

Axis to Object - Move the axes of an object selection to the center of a target object selection.

Axis to Points - Move the axes of an object selection to a target vertex selection center.

Axis to PE selection - Moves the axis of the current point edit object to the center of the point edit selection.



Snap – same as pressing the toolbar button

Point Edit Selection - move the pivot to selection

Face with Rotation - orient the pivot to the face selection then move the pivot to the selection center

Face with Rotation to Center - orient the pivot to the face selection then move the pivot to the geometry center

Show Axis - will flash the axis for a short time after the snap is complete

PE to Object - Moves the current point edit selection to the center of a target object selection.

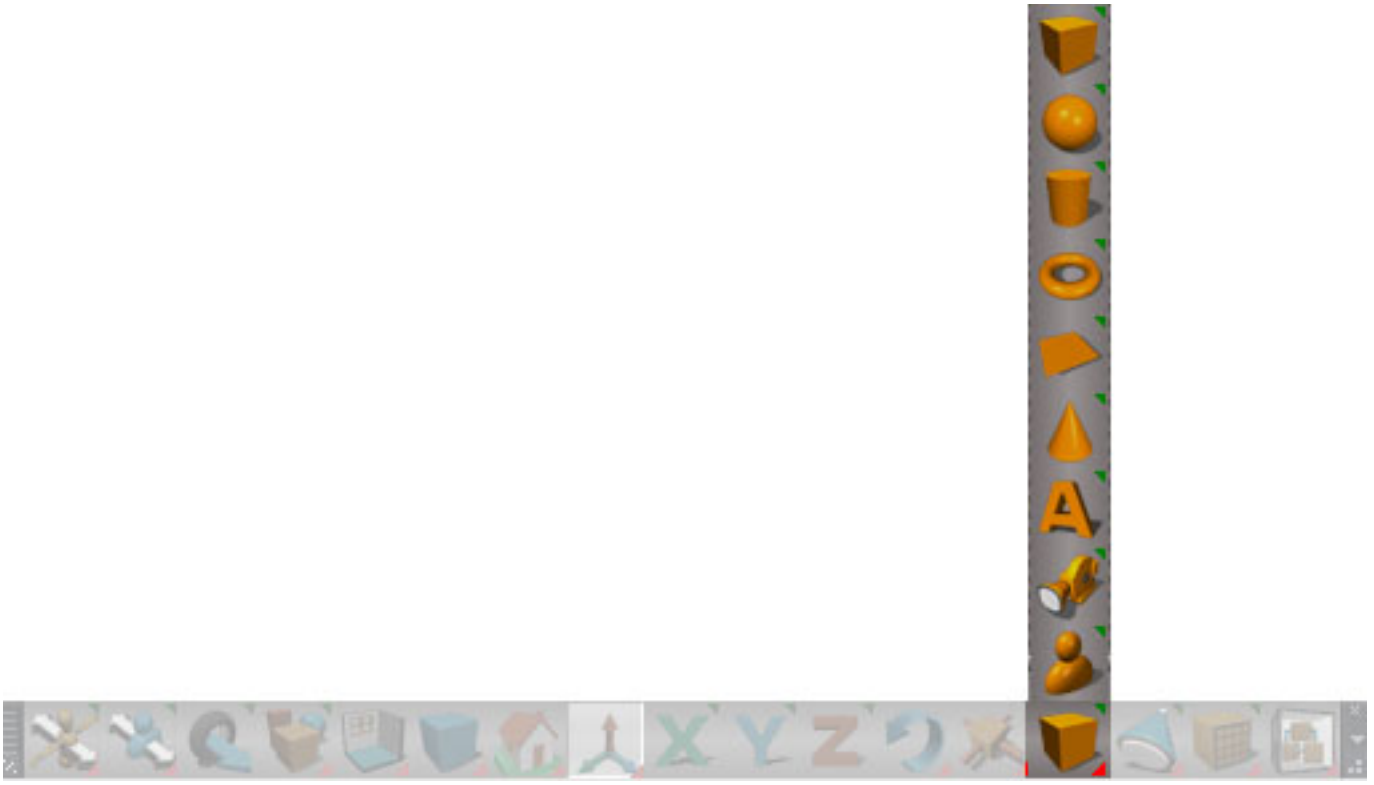
PE to Points - Moves the current point edit selection to a target vertex selection center

Joint to Object - Move a joint selection to the center of a target object selection

Joint to Points - Move a joint selection to a target vertex selection center.

3.13 Primitives

Primitives information missing from original manual



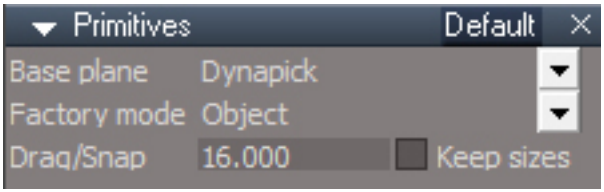
Primitives in the bottom toolbar

Unofficial Update Primitives in the bottom toolbar

Location of the camera and entry point buttons have been changed for the Unofficial Updates

RMB panels

Default Aspect - primitive tool preferences panel



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 create primitives aligned with the view and located behind the view mirrored relative to the object location under the cursor. This is a bug, it should be centered on the object, not behind the view. Move object in local space along it's z axis to reposition. If no object is under the cursor, screen behaves the same as Ground.

To work around the screen space bug, use vertex snapping with 2D snap enabled.

Factory mode

Add - boolean add to the selected item
Cut - boolean cut the selected item, lines need to be visible to see the result
Intersect - boolean intersection
Merge - boolean merge
Object - create a new stand alone primitive object
Sibling - create a grouped relationship with the selected item as children of the same group object
Subtract - boolean subtraction
Union - boolean union

Cameras and lights only have Object and Sibling modes.

Drag/Snap - sets a radius where snapping cannot occur when creating primitives with snapping enabled. To override and force snapping press the ALT key.

Keep sizes - will remember and for single click creation will use the last size that a primitive is created while the tool is active. Dropping the tool will reset to the default size. When unchecked will use the size parameters from the individual primitive preferences panels.

Boolean factory modes

Before the boolean modes, add, cut, intersect, merge, subtract and union set the primitive preferences before drawing or clicking to create the next instance.

Boolean modes are applied with a flatten mode of operation. Other modes are not supported.

Text primitive with cut can be slow and unstable.

Wirefame solid draw mode is needed to see the cut boolean properly.

Plane and sphere primitives will not boolean cut the face that they are drawn on.

"Primitive employs extensive snapping."

Can set the height by snapping to other objects in the scene when RMB dragging during creation of the primitive. Snapping can also be done during the LMB phase of primitive creation.

RMB - primitive preferences panels

Cube Primitive

Mode

Diagonal - define base plane by LDrag, RDrag to define the height

Edges - define first edge by LDrag, release the button and move mouse to finish defining the base then RDrag to define the height or LClick to use the current height

Points - LClick define first point of the edge, LClick to define the last point of the edge, LClick to define the base, LClick to define the height

Width - size in the local X direction

Height - size in the local Z direction

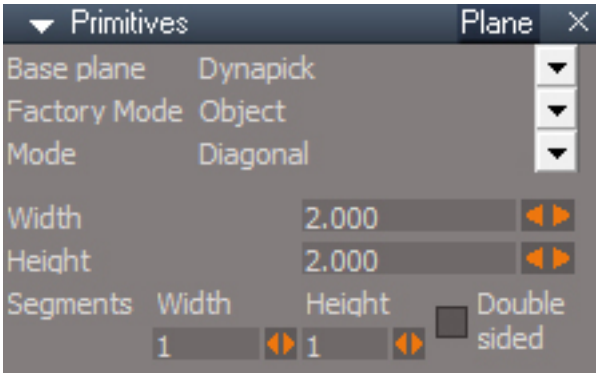
Depth - size in the local Y direction

Width Segments - number of edges in the X direction

Height Segments - number of edges in the Z direction

Depth Segments - number of edges in the Y direction

Plane Primitive



Mode

Diagonal – LDrag to define first corner and the opposing corner of the plane.

Edges – define first edge by LDrag, LClick to finish the plane

Points – LClick 3 times to define 3 corners of the plane

Width - size in the local X direction

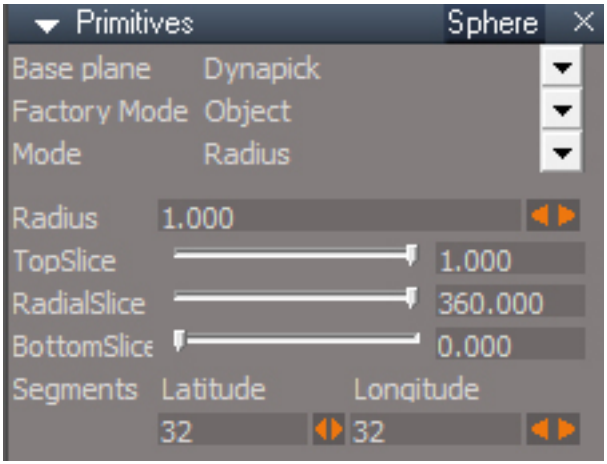
Height - size in the local Y direction

Width Segments - number of edges in the X direction

Height Segments - number of edges in the Y direction

Double sided - number of edges in the Y direction

Sphere Primitive



Mode

Diameter – define diameter for base by LDrag or RDrag defines height.

Radius - define center + radius for base by LDrag or RDrag defines height.

Radius - size of the sphere as measured from its center

TopSlice - percentage of the top portion to keep after slicing 1.0=100%=keep all of the top

RadialSlice - number of degrees in the radial direction

BottomSlice - percentage of the bottom portion be sliced 0=0%=no slice

Latitude Segments - number of edges in the radial direction

Longitude Segments - number of edges in the axial direction

Cylinder Primitive

Mode

Diameter – define diameter for base by LDrag, RDrag defines height.
Radius - define center + radius for base by LDrag, RDrag defines height.

When switching between LDrag and RDrag do not release the held button until after the switch.

Radius - size of the circle cross section as measured from its center

Height - height

Shell - remove the geoemtry in the center of the circular cross section to create a hole

Thickness - shell thickness

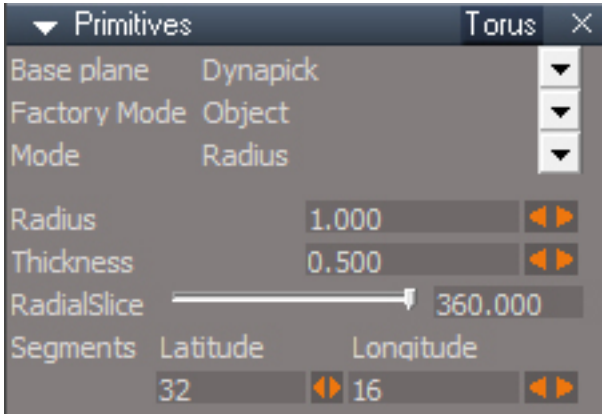
RadialSlice - number of degrees in the radial direction

Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Cap Segments - number of edges at the top and bottom of the mesh, the first edge is invisible

Torus Primitive



Mode

Diameter – define diameter for base by LDrag

Radius - define center + radius for base by LDrag

RDrag does not work for the Torus primitive.

Radius - size of the torus as measured from its center, not measured to the center of the cross section

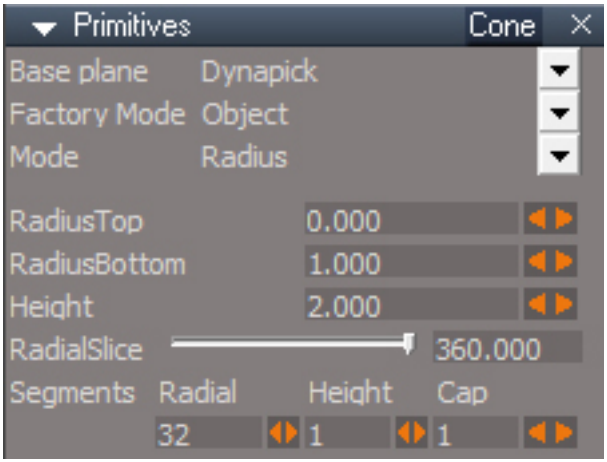
Thickness - diameter of the circular cross section of the torus

RadialSlice - number of degrees in the axial direction

Latitude Segments - number of edges around the major axis

Longitude Segments - number of edges around the minor axis or cross section

Cone Primitive



Mode

Diameter – define diameter for base by LDrag, RDrag defines height.

Radius - define center + radius for base by LDrag, RDrag defines height.

When switching between LDrag and RDrag do not release the held button until after the switch.

RadiusTop - size of the circle cross section at the top

RadiusBottom - size of the circle cross section at the bottom

Height - height

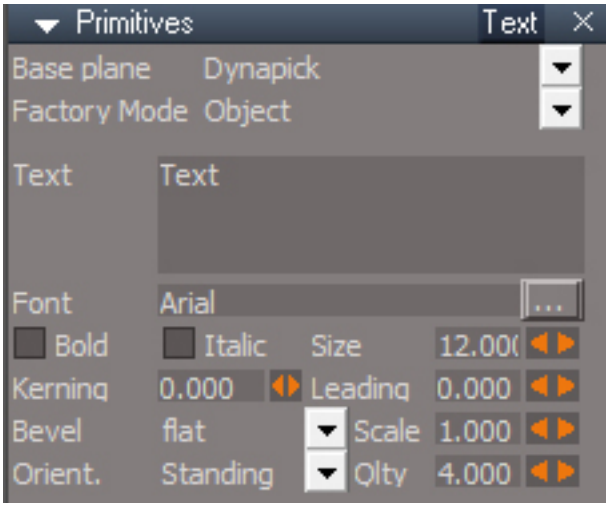
RadialSlice - number of degrees in the radial direction

Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Cap Segments - number of edges at the bottom of the mesh, the first edge is invisible

Text Primitive



LDrag to control orientation about the local Z axis, RDrag to scale along the local Z axis.

Text -

Font -

Bold -

Italic -

Size - width/height of a character where a value of 4 translates to about 1 meter for TrueType fonts

Kerning - adjust spacing between letters

Leading - adjust spacing between lines of text

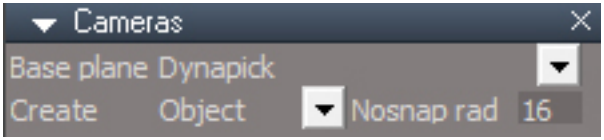
Bevel - type of bevel, ***base*** has no bevel and ***2D*** has zero thickness

Scale - bevel scale, positive values effect the bevel and negative values effect the base(more or less)

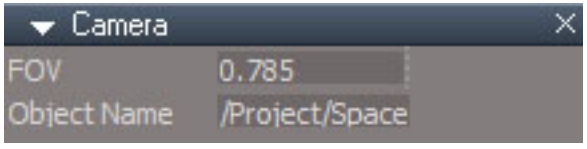
Orient - ***Lying*** against the base plane or ***Standing*** up on it

Qlty - controls the number of vertices used to create the text

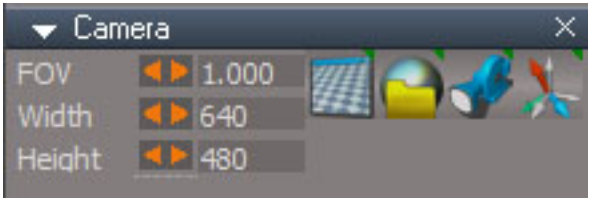
The thickness of the text depends on the bevel type.
Large values for Qlty will reduce the characters smoothing. Values of the form "X.1" like 4.1, 5.1, 6.1 seem to work best in reproducing the shape defined by the chosen font.



Nosnap rad - 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.



Camera panel



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 a default FOV of 1.000, extra buttons and the Object Name is not shown in the panel.

Camera Panel buttons

Camera Window - Switch the first floating 3D window or open a new 3D window to the camera view and move it to the upper right of the tS screen with the size of the window taken from the Width and Height parameters. Window includes the view toolbar.
RClick selects the camera
Same icon as 3D Window

If the first floating 3D window is closed, any other floating 3D windows will not take its place, so a new window will be opened. If all 3D windows are closed then the first becomes eligable for conversion.

LMB press after opening a window with the Camera Window or Camera Render to File will close the previous window and reopen it.

Camera Render to File - Same as the Camera Window button except it also opens the Render to file dialog. Note that the size in the Render to file dialog may need to be manually updated to match the Width and Height set on the camera.
RClick opens windows explorer to the render folder set in the Render to file dialog.
Same icon as Render to File

This will stop the View synchronization before rendering.

View - starts synchronization with modelspace based on the camera movement and FOV changes. Model view is switched to the camera view.
RClick stops synchronization

Same icon as Camera

Do not render from this view while synchronization is active. This process uses a form of scripting that is not compatible with animation renders.

Looks like this needs a clear undo history?

Help says View / Previous View
Is really "start synchronize" and "stop synchronization"

Normalize Rotation orients the camera to point in the negative Y direction.
RClick orient and position the camera to values of the default perspective view.
Same icon as Normalize rotation for axes

Entry point is the same as a camera except it has no Object name connector and the FOV is set to 0.5 by default.

The entry point camera has the special name "EntryPoint". Any object at the root level of the scene with the name "EntryPoint" will be used as the 3D view point and orientation when loading the scene. The view will also get its FOV from the camera. The view is not tied to the EntryPoint. So if the entry point camera moves the view does not move with it.

New for the Unofficial Updates

Tube Primitive

Top Outer Radius - size of the circle cross section at the top

Top Inner Radius - top inner radius

Bottom Outer Radius - size of the circle cross section at the bottom

Bottom Inner Radius - bottom inner radius

Radial slice - number of degrees in the radial direction

Blank Button - LClick open Keying panel and select the internal primitive node, RClick select the full mesh object

Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Top Segments - number of edges at the top of the mesh

Bottom Segments - number of edges at the bottom of the mesh

Gear Primitive - makes a star shaped mesh

Height - size local Z direction

Inner Radius - size of the central hub

Longitude - number of gear teeth or star points

Outer Radius - length of the teeth

Blank Button - LClick open Keying panel and select the internal primitive node, RClick select the full mesh object

Flatten - flattens the mesh and fixes the normals - do not use if animating the gear attributes

Tube and Gear primitives are not created with widgets and do not have their own Preference options. They do use the ***Base plane*** and ***Factory Mode*** defined by the other primitives preference panels.

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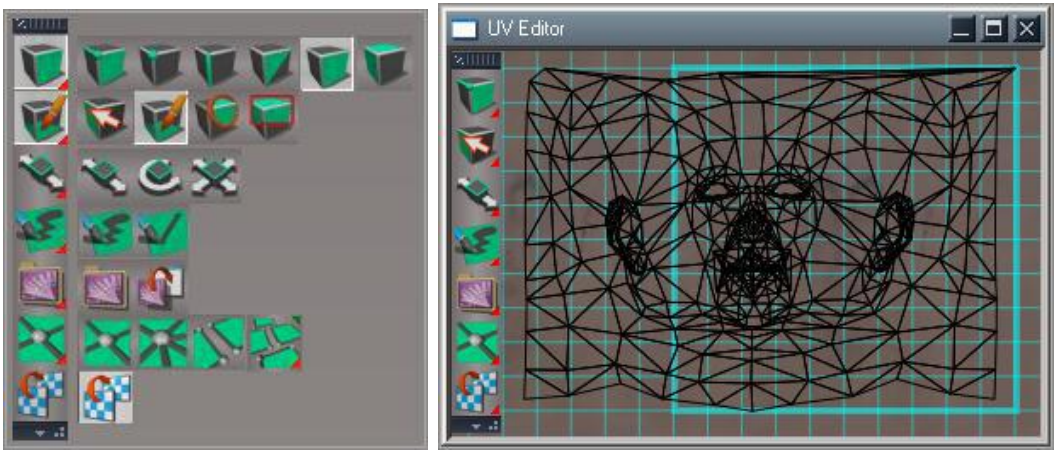
Chapter 5 SURFACING - Workspace

5.1 UV Projections

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

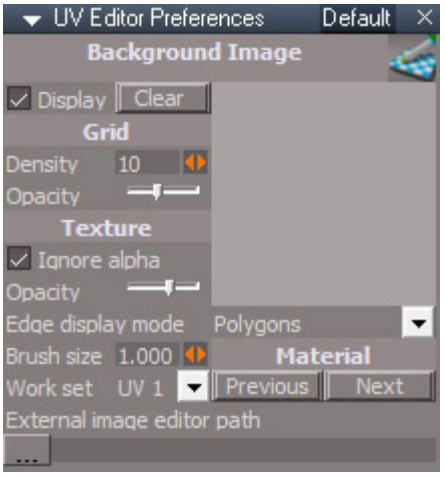
LMB Next Material, RMB Previous Material

Undo

Redo

5.2.5 UV Mapping Editor Options

Default Aspect

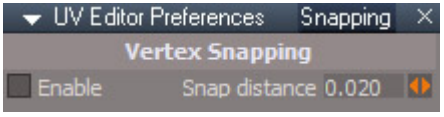


Unofficial Update Default Aspect

Color Aspect

Unofficial Update Color Aspect

Export Aspect



Snapping Aspect

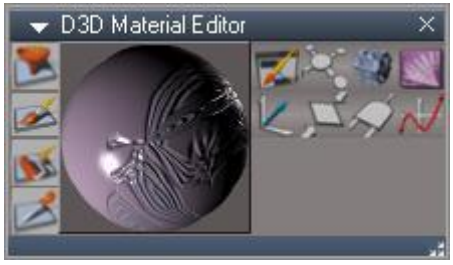
LMB open the uv editor, RMB open preferences in a floating window

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

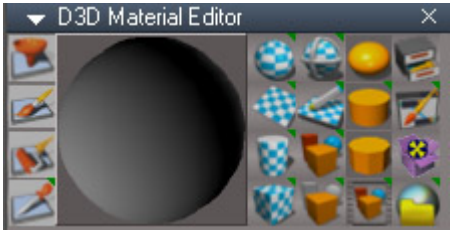
5.3 Workspace Material Editor

D3D Material Editor

Basic Painting Tools:



Material Editor



Unofficial Update Material Editor

Spherical UV Projection

Planar UVProjection

Cylindrical UV Projection

Cubic UV Projection

Shrink Wrap UV Projection

UV Editor

Render Scene

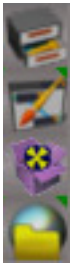
Render Object

Smooth Normals

Autofacet Normals

Facet Normals

Render Animation



Update Library Places

Edit DX Material in Link Editor

Convert Direct3D Materials

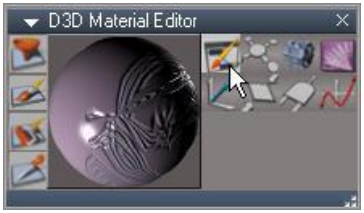
Render to File

-  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.

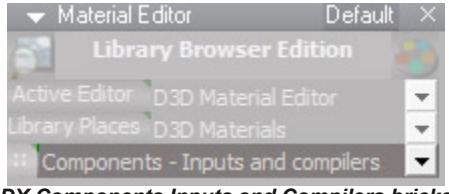
Advanced Editing Tools:

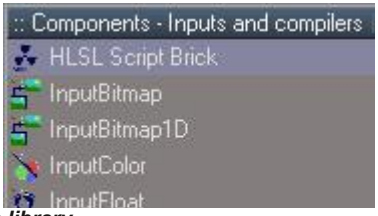
- DX Edit.



Edit DX Materials in the Link Editor

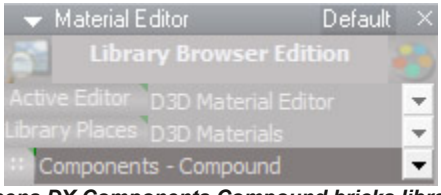
- DX Components Inputs and Compilers.

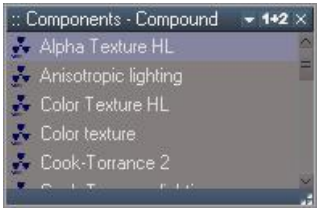




Opens DX Components Inputs and Compilers bricks library

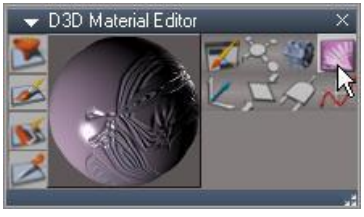
- DX Components Compound.

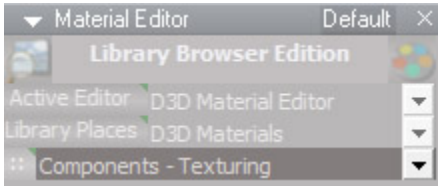


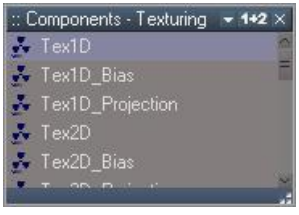


Opens DX Components Compound bricks library

- DX Components Texturing.

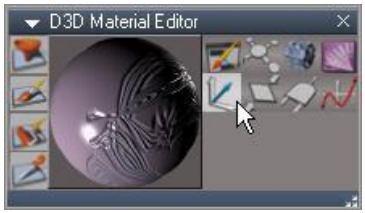


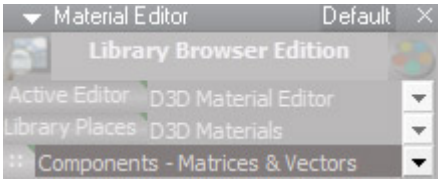




Opens DX Components Texturing bricks library

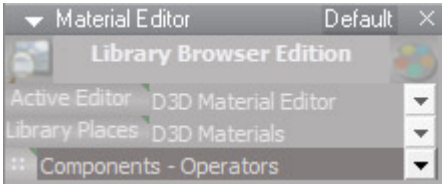
- DX Components Vectors.





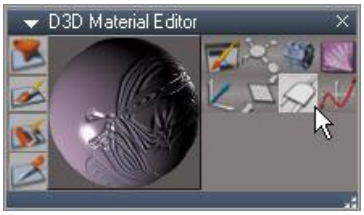
Opens DX Components Vectors bricks library

- DX Components Operators.



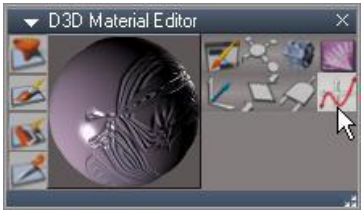
Opens DX Components Operators bricks library

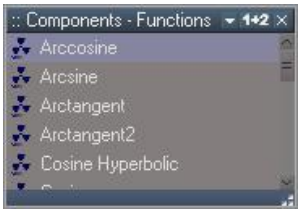
- DX Components Logic.



Opens DX Components Logic bricks library

- DX Components Functions.



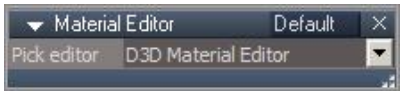


Opens DX Components Functions bricks library

Material Editor Settings:

- Default Aspect:

Shows available pick methods , the choices will depend on if there are other offline renderers installed , e.g. V-Ray



Default Aspect

Unofficial Update Default Aspect

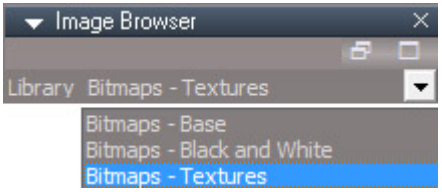


Image Browser – open image browser. Open a library by selecting one of the options in the dropdown.

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

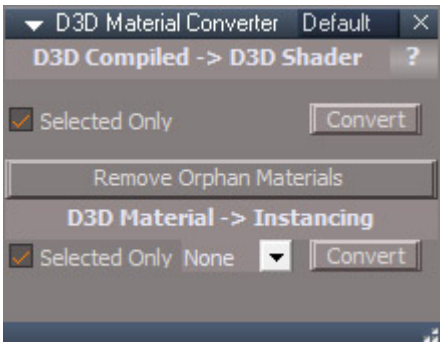
Active Editor button – RClick reset - This fixes a bug in tS in with which the Vray Material Editor can disappear from the combo control

Library Places button – RClick loads a preset list of libraries into the Library Selection list and places "D3D materials" plus all defined library places into the Library Places selection list. LClick - nothing

Library Places Selection – the contents of the chosen library place will be used to populate the Library Selection list. "D3D materials" is a special item that will populate the library list with bitmap, component, material and shader libraries.

:: – LMB libraries open as 2D aspect, RMB libraries open as 1D+2D aspect. LMB and RMB also save the vertical position of the library panel

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



D3D Material Converter:

D3D Compiled → D3D Shader –converts materials from a closed compiled format to an open 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 compiled material to D3D, Yafaray or Indigo for a selected object:

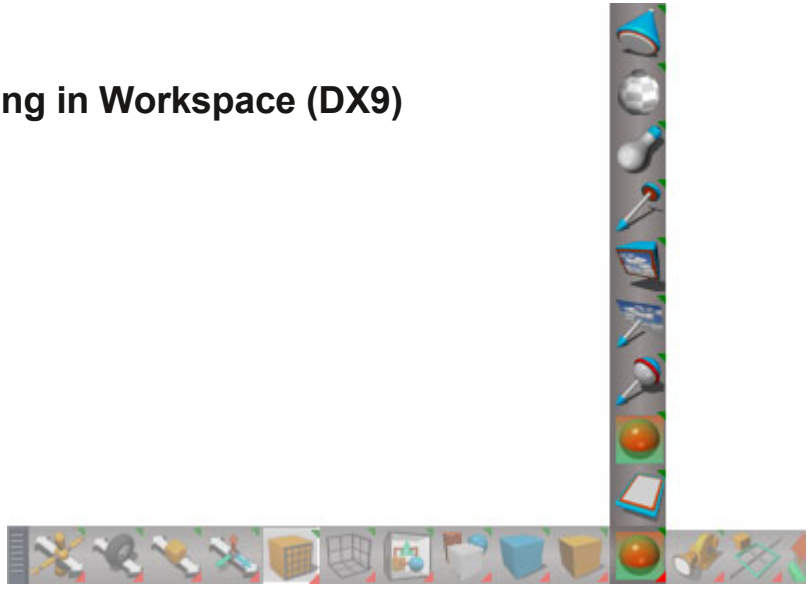
1. Set the material editor to edit picked materials
2. Pick the material on the object and edit it in the link editor
3. Select the material node
4. Run the conversion

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

needs feedback - runs invisibly for a while with nothing visible when converting entire scene to scene instancing
other processes may also need feedback - submitted an updated version

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 1.0 and up, bottom scrubber range 0.0 to 1.0

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.

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

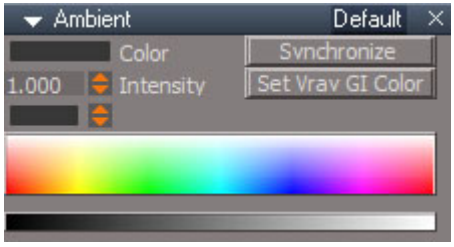
If you RClick the lights mesh shape it will open it's preferences in a floating window. To get to the shape of the omni light and directional light zoom in, select something else or hide the widget first.

Opening the preferences this way will erase undo history.

7.1.1 Real-time Light Types

The new color pickers have interactive update, so the color of the light in the scene changes as the picker is manipulated.

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

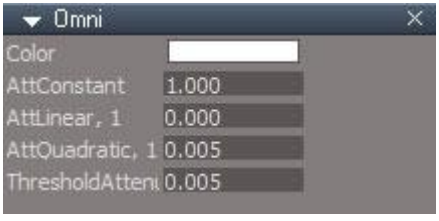


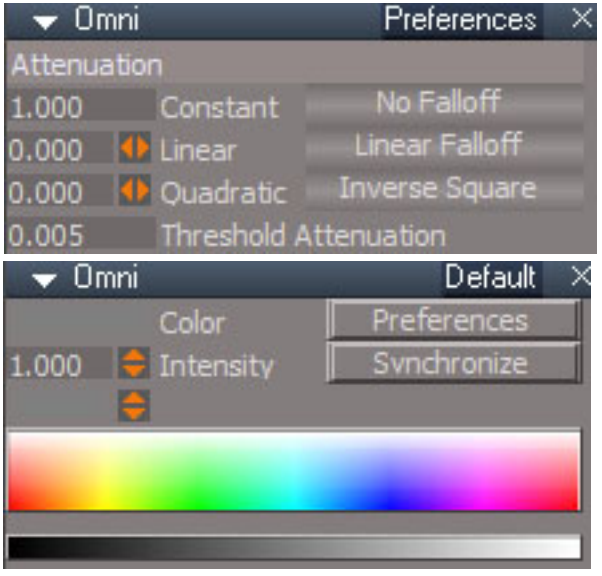
Unofficial Update Ambient Light

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

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

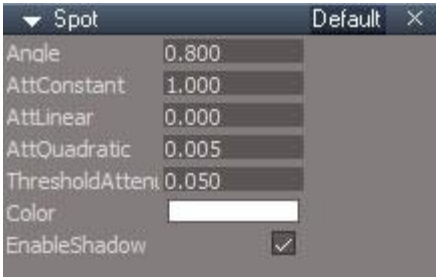
Omnidirectional light

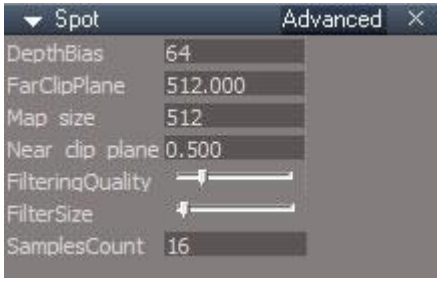


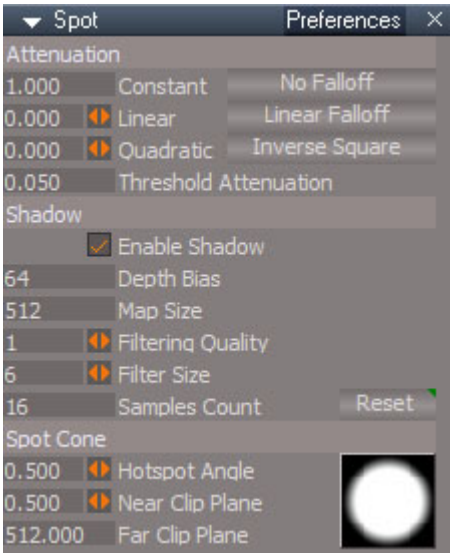


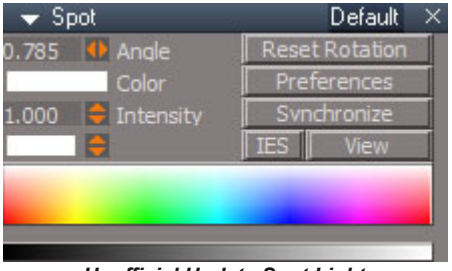
Unofficial Update Omni Light

Spotlight









Unofficial Update Spot Light

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

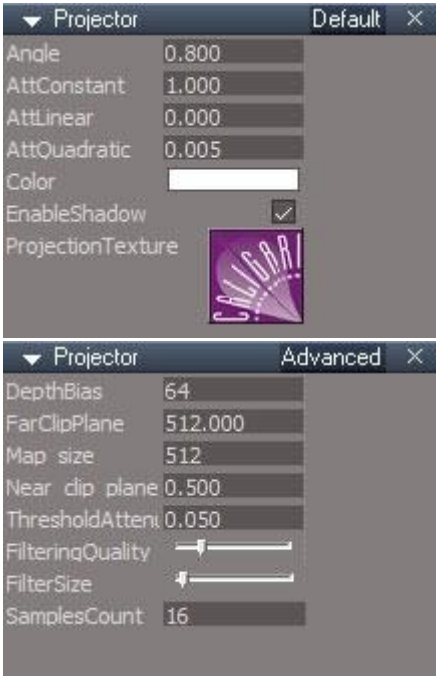
Reset Rotation – sets the X rotation to -180 degrees and Y and Z to 0 degrees, light is facing downward with the top of the image in the negative X direction.

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, TODO link to IES page

View – the light has a camera inside of it. This button will set the default main 3D window to a camera view using this camera. Click again to switch back to the previous view.

Projector light



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

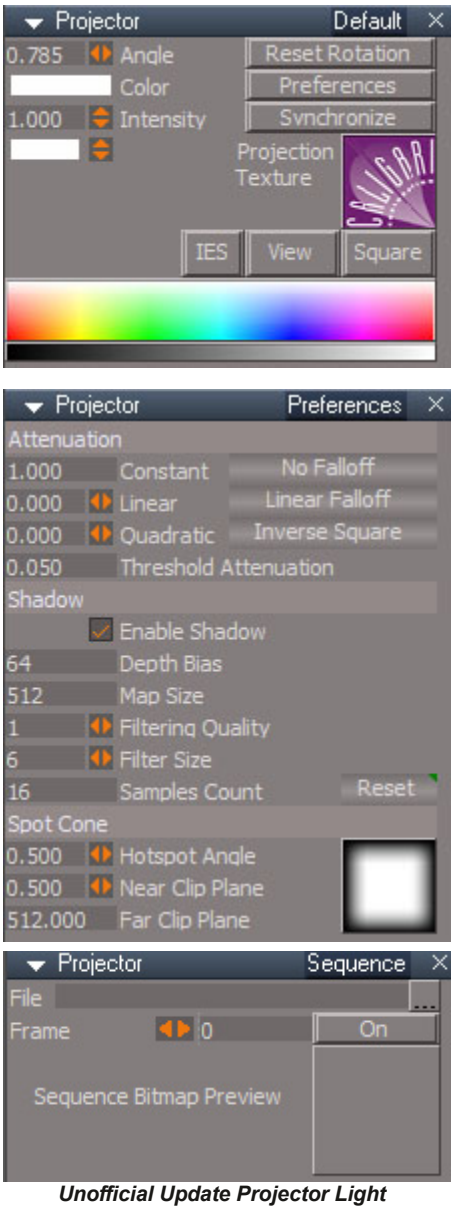
Reset Rotation – sets the X rotation to -180 degrees and Y and Z to 0 degrees, light is facing downward with the top of the image in the negative X direction.

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, TODO link to IES page

View – the light has a camera inside of it. This button will set the default main 3D window to a camera view using this camera. Click again to switch back to the previous view.

Square – switch the projection between a square and circular shape.



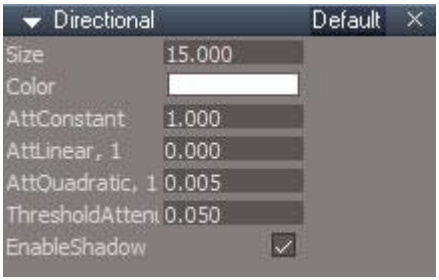
Unofficial Update Projector Light

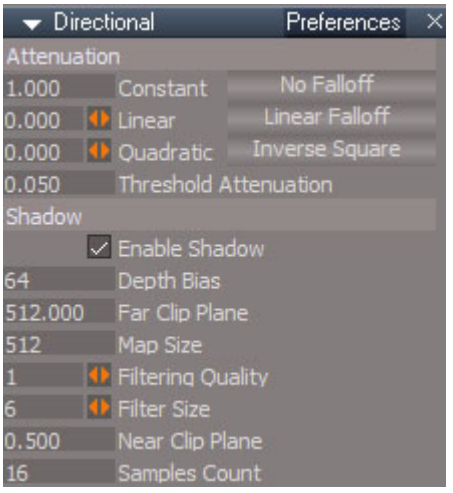
File – choose a set of image files to be played back by selecting 1 image in the sequence.

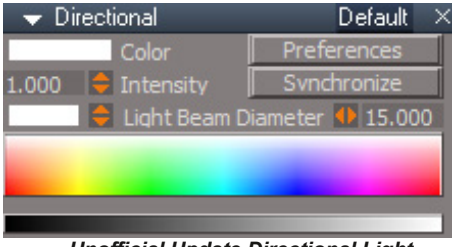
Frame – current frame number for the image sequence. The Frame value can be animated in the timeline.

On – activates the image sequence

Directional light







Unofficial Update Directional Light

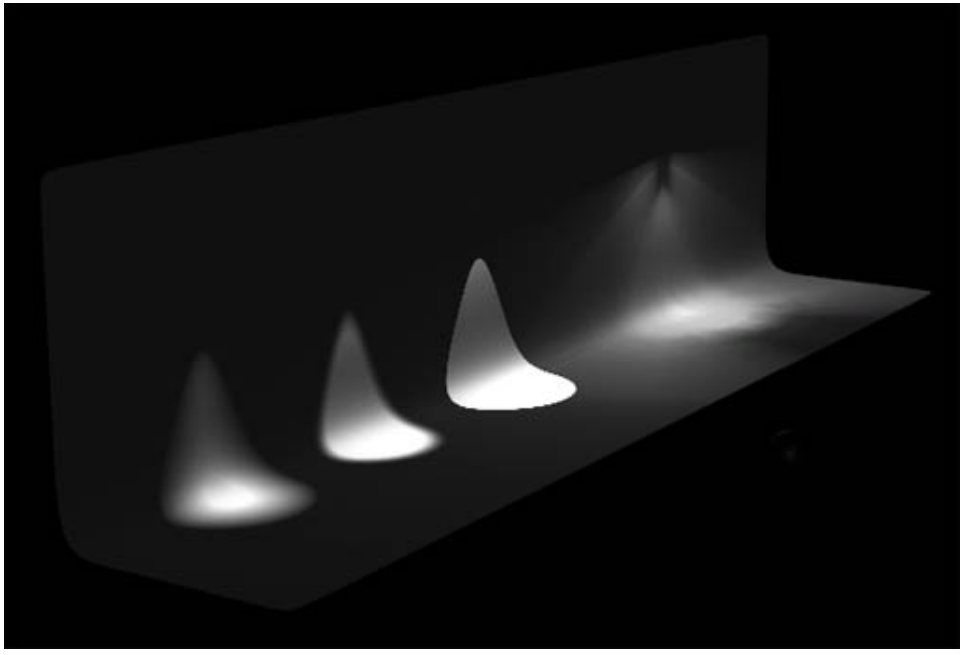
Synchronize – responds to extra information unique to the light type in addition to the standard color and matrix changes.

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

Infinite light

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.



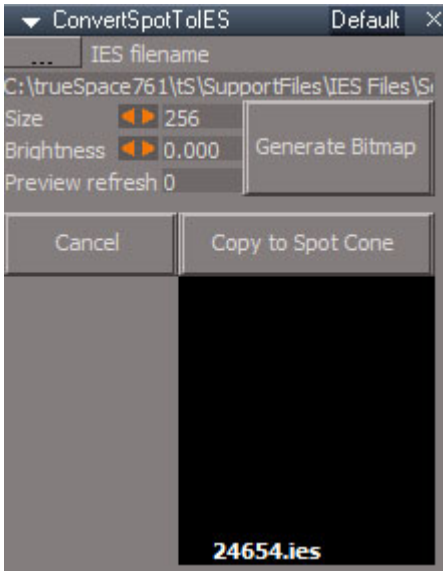
from left to right - soft/small hotspot, truespace default, hard/large hotspot, ies profile light

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 spolight 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 brighness 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.

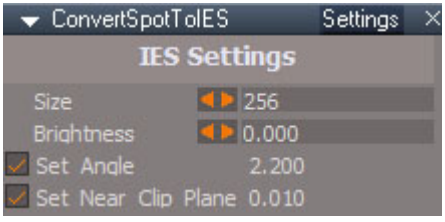
Push the IES filename(...) button to choose an IES file

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.

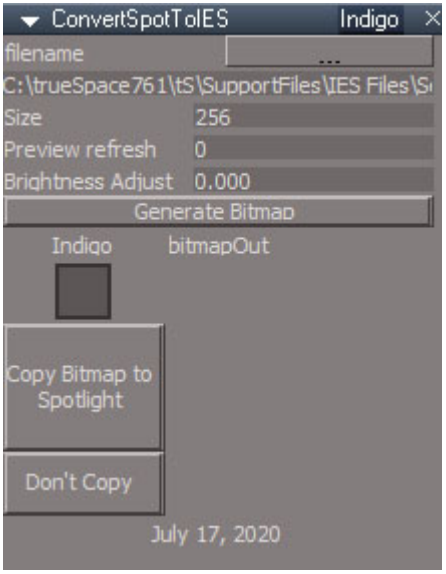
When unchecked the profile will be compressed compared to the real world light.

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.

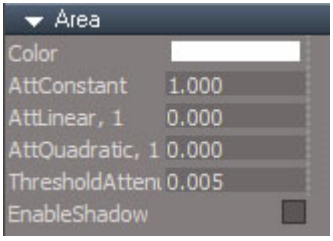
Area light and sky light are not documented in the original documentation

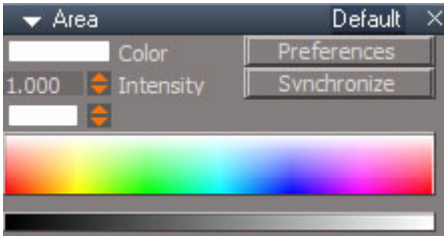
Sky

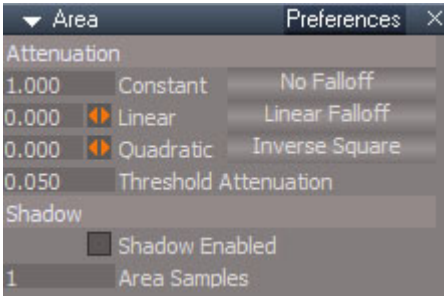
The Sky light is identical to the infinite light type in its lighting behavior. The mesh has a different appearance.

? any vray indigo yafaray differences ?

Area

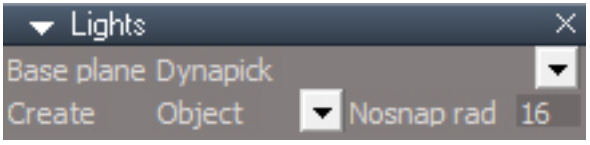






Area Samples – ? used by YafaRay renderer ?

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 space 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

Light Color Pickers

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 meaning, brightness slider.

true Color - Color Picker (Random) – random color picker.

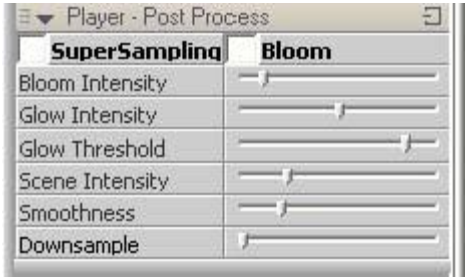
Enter – press to set the color based on manual RGB color entry.

Intensity – left scrubber for values greater than 1.0, right scrubber for values less than 1.0.

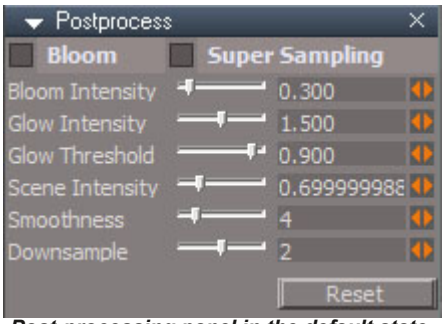
Lum, Sat, Kelvin, Color – press switch between the different color pickers

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.

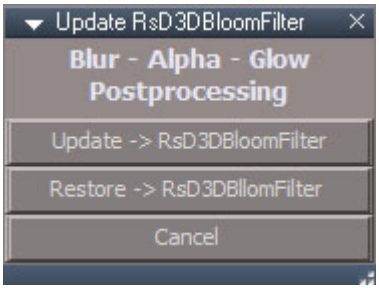


Post-processing panel in the default state.



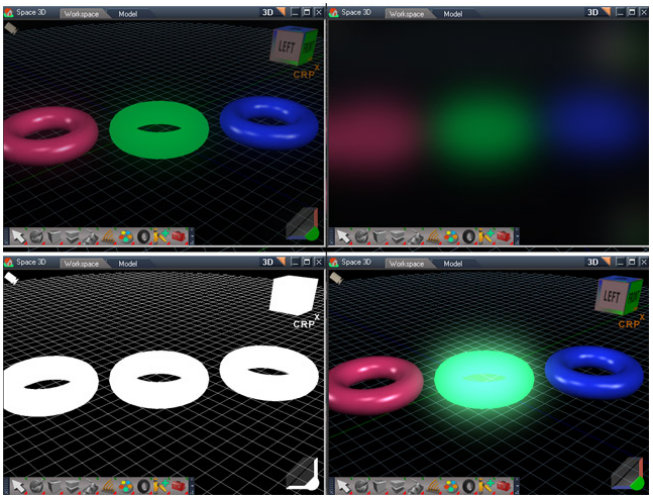
Post-processing panel in the default state.

Reset – global reset of all postprocess values



The postprocess library has a script for adding blur, alpha and glow post process effects.

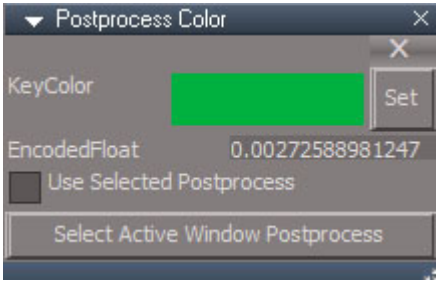
Scene Intensity value below 100 will behave the same as before
Scene Intensity 100 to 199 to get only the bloom, which is really a blur
Scene Intensity = 200 to get alpha values as gray color
Scene Intensity = 300 to get a color key based glow
Scene Intensity = 301 to get a color key based glow plus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

7.1.7 Real-time Render To File

RMB opens an explorer window to the render file path

Place rendering stuff here or move it into additions with links from here

skip to the next chapter and decide later

pages here, not in orphan pages at the end of this document

D3D Render *More Information*

Offline Render Engines

TODO Mention getting started with yafaray and vray render engines

YafaRay Information
January 31, 2021

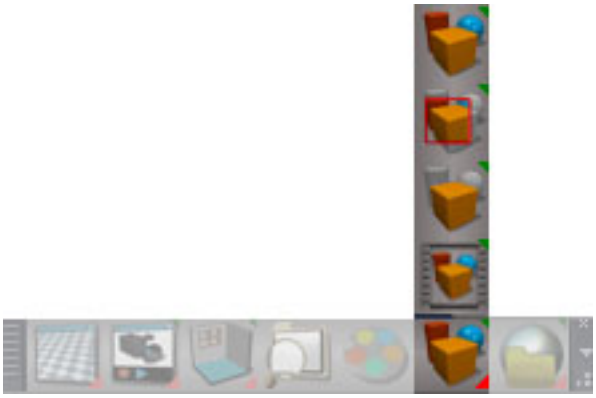
https://github.com/YafaRay/libYafaRay
Is the where new development for YafaRay can be found

https://github.com/YafaRay/Core/releases
Is where the final release, v3.5.1, can be found

Place rendering stuff here or move it into additions with links from here

skip to the next chapter and decide later

Bottom Toolbar Rendering



Unofficial Update Stack Toolbar Rendering

Place rendering stuff here or move it into additions with links from here

skip to the next chapter and decide later

Chapter 8 - Character Editing

8.1 Character Editing Introduction

Unofficial Update Second Location for Character Tools

8.2 The Tools

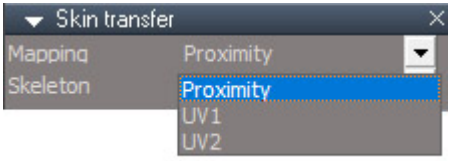
8.2.3 Controlling How the Skin Reacts

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

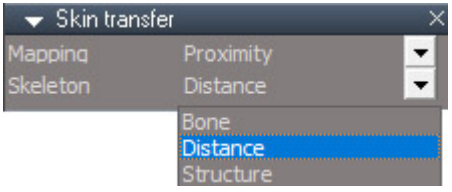
Mapping – match points between characters



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

Distance – match bones by their distance in 3D space

Structure – match bones by their positions in their hierarchy

link to the beta video here

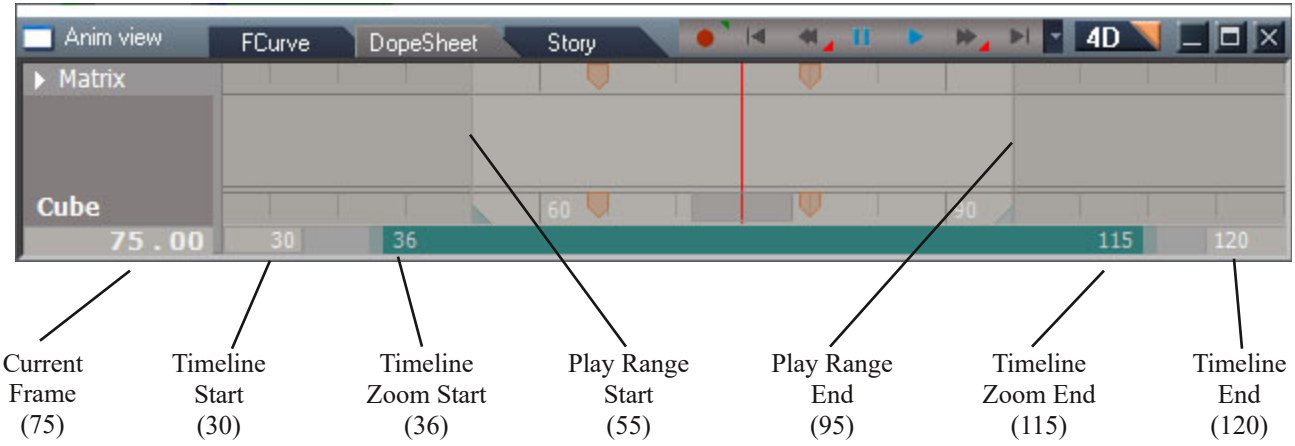
Chapter 9 – Animation

9.1 Animation Introduction

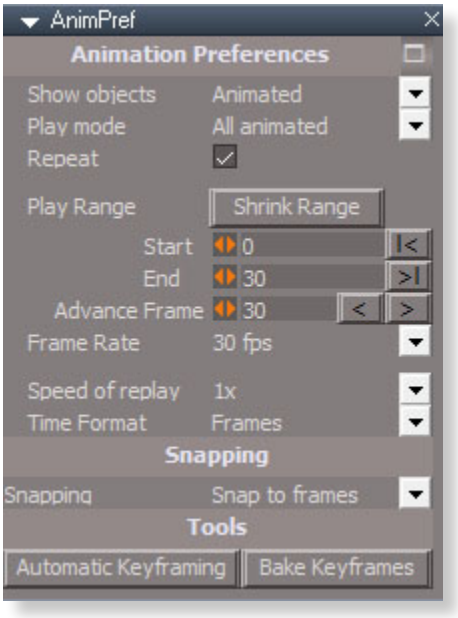
This chapter documents the new animation tools found in the Workspace (it does not cover the animation tools such as the KFE and similar that are found in the Model side). The Workspace features a powerful range of tools for creating animation which will let you work with physics simulation, skeletons, 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



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.

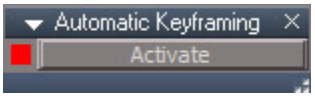
The small button upper right next to the title will open the Animation Preferences in a floating window.

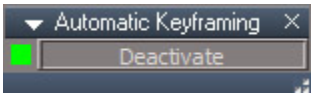
Shrink Range : set the timeline start and end to match the current preview play range

|< : set timeline start to 0, does not effect the play range

>| : set timeline end to 300, does not effect the play range

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

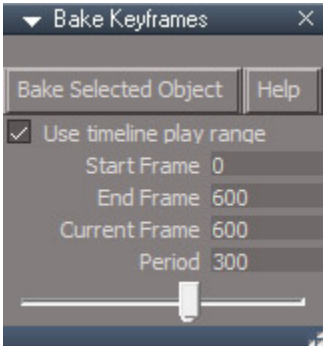




Automatic Keyframing : open the Automatic Keyframing panel

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 Keyframes : open the Bake keyframes panel



Set the animation play range to determine what keys get baked
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.

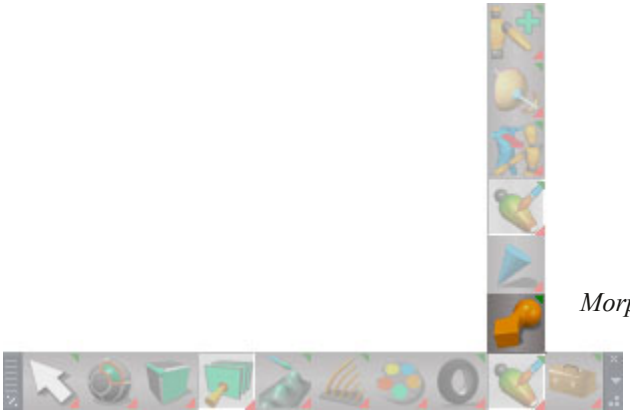
9.4 Morphs

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.



Morph icon is wrong in the original manual

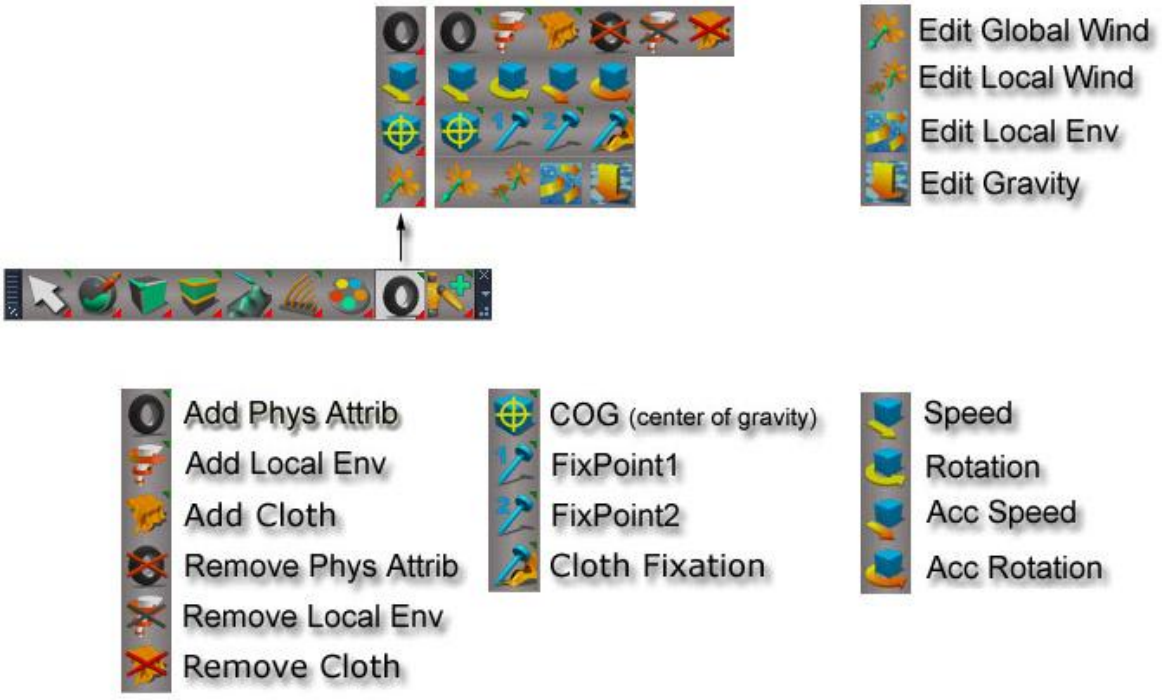
link to soft paint morph mode pg 62 *More Information*

Interpolation Toolbar *More Information*

Chapter 10 – Physics

10.1.1 Physics: Space and Engine

10.2 Physics Toolbar

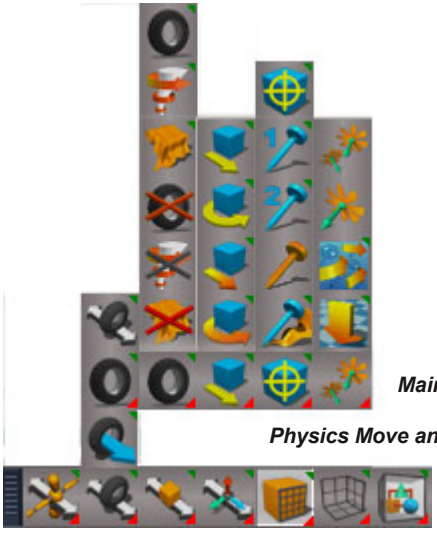


Main Physics Tools

Physics Move and Start/Stop simulation tools

The unofficial update main physics tools can also be found on the bottom toolbar in the same area as the physics move and start/stop simulation tools.

Unofficial Update Main Physics Tools

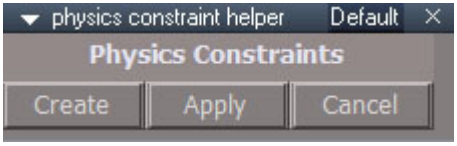


Main Physics Tools
+
Physics Move and Start/Stop simulation tools

Unofficial Update Bottom Toolbar

10.2.7 Centre of Gravity and Fixation

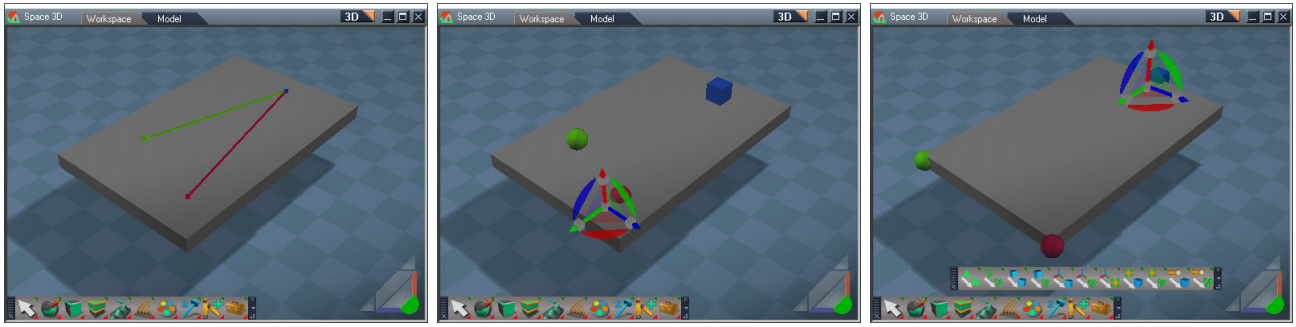
 **Center Of Gravity:**  **Fixation point 1:**  **Fixation point 2:**



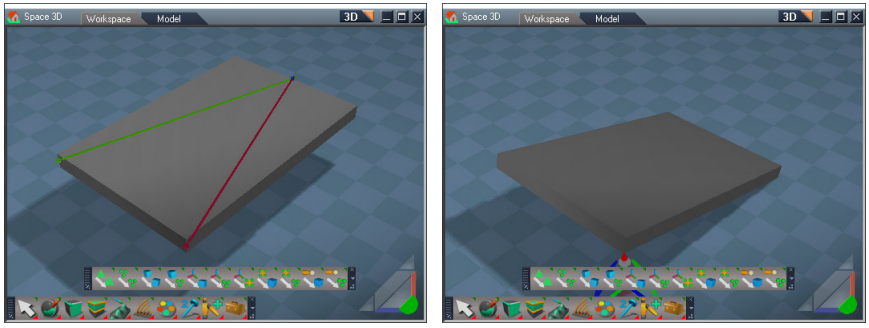
 **Physics Constraint Helper**: creates helper objects in the scene for positioning the center of gravity and fixation points

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.

Chapter 12 Collaboration

Toolbar with SharedSpace icon

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Unofficial Update Toolbar with SharedSpace icon

12.1.6 Basics of Navigation

First Person Navigation

FPN Tool

Unofficial Update FPN Tool

First Person Navigation is found in the stack toolbar.

Chapter 40 Unofficial Update Additions

Red, Gold/Clintons and Blue Toolbars

Red Toolbar

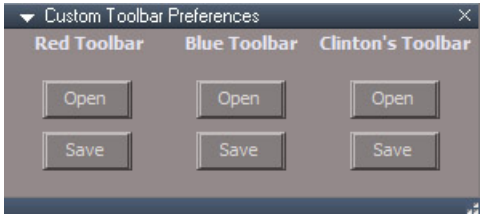
Blue Toolbars

Gold/Clintons Toolbar

Open - opens the corresponding toolbar in a new link editor window and resets all the toolbars and clears the recent files list.

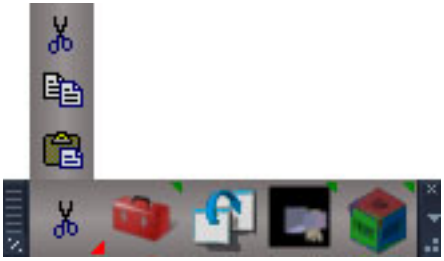
ⓘ This can be a long process.

Save - will save all built in toolbars.



⚠ *Be sure to follow the sequence, Open, make changes and immedietly Save using the corresponding save button. If any other toolbar is altered it will be saved in that configuration permanently.*

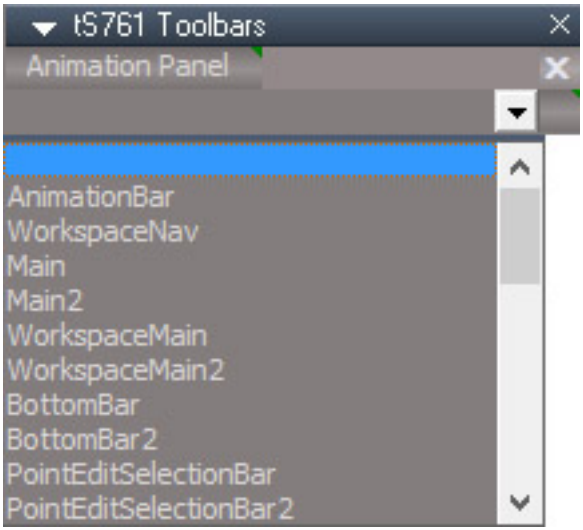
Red Toolbar



Cut - select an item to use with the Paste. Saves the selected object to a file and then deletes the original.

Copy - same as the copy button on the bottom toolbar

Paste - loads the file saved by the Cut into the active link editor window.



trueSpace Toolbars - loads the tS761 Toolbars node into the scene and opens the panel
RMB "close all toolbars", actually closes some specific toolbars and removes the tS761 Toolbars node from the scene

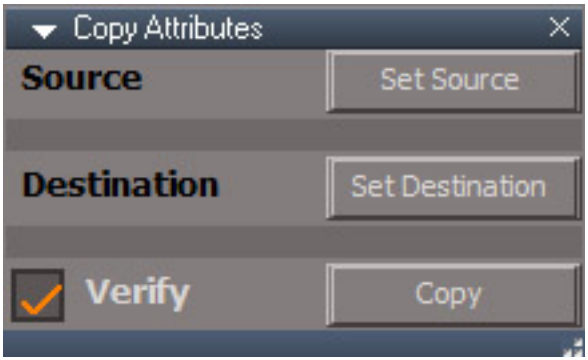
Same icon as the Red Toolbar button

Animation Panel - opens the Animation Panel, Right Click closes the Animation panel

More Information

upper X - closes the panel
lower X - Deletes the tS761 Toolbars.RsObj from the scene

The dropdown list can be used to open 2 separate toolbars. Select a toolbar then use the small button to the right of the dropdown to load the toolbar. Select a second toolbar and Right Click on the small button to open it



Copy Attributes - copy the common attributes from the source node to the destination node. Verify will ask before copying each connector value.

Same icon as Make Copy of Window button

1. Select the source node which has the attributes to be copied
2. Press the **Set Source** button
3. Select the destination node which will receive the attribute values
4. Press the **Set Destination** button
5. Press the **Copy** button

One use for this tool would be to convert an existing light to a different kind of light. Add the desired type of light to the scene and set it as the destination. Set the source light and when the script is run it's color, location and other attributes will be copied to the new light.

A node can have a lot of attributes, so this tool can potentially eat up many undos.