



User Guide



Advance Software

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Important Warning

**Please read carefully before using
this software.**

Some people are susceptible to epileptic seizures or loss of consciousness when exposed to flashing lights or light patterns in everyday life. Such people may have a seizure while watching television images or using some computer software. This may happen even if the person has no medical history of epilepsy or has never had an epileptic seizure. If you or anyone in your family has ever had symptoms related to epilepsy (seizures or loss of consciousness) when exposed to flashing lights, please consult your doctor prior to using this software. We advise that parents should monitor the use of this software by their children. If you or your child experience any of the following symptoms: dizziness, blurred vision, eye or muscle twitches, loss of consciousness, disorientation or any involuntary movement or convulsion whilst using this software, discontinue use immediately and consult your doctor.

Introduction

XSG – eXtensible Scene Graph is like HTML for 3D web. 3D content is best manipulated in an interactive environment & this is the role XSG Studio performs.

XSG Studio is the world's first XSG 3D web interactive graphical 3D website editor. Use it to create XSG 3D web content. XSG Studio operates in the same environment as our Infinity 3D web browser so content can be assured to look exactly the same when run in the browser – WYSIWYG – what you see is what you get.

Hit the Run button from XSG Studio to immediately deploy into the browser environment.

When creating 3D website content, remember users will not necessarily have computer systems as powerful of yours. Infinity/XSG places no limits on the complexity of 3D websites so complex sites will run too slowly on some computers to be usable. Hence target your audience appropriately.

Infinity/XSG supports level of detail to enable tuning of content to the equipment it's being run on, if such detail is provided by the site designer.

System Requirements

XSG Studio requires a computer system with sufficient power and functionality to run correctly. If your computer system does not meet the minimum recommended specification below, the software may not run, may run slowly, be unresponsive, unstable, or exhibit visual flaws.

Operating System	Windows 10 version 2004 or better.
CPU	x86-64 AVX capable processor. Ideally AVX-512 capable.
Memory	At least 8 GB
Graphics Processor	DirectX 12 compatible GPU. Shader Model 6.6, DXR 1.1 capable. Safe Mode: Shader Model 6.2
Network	Broadband Internet connection recommended
Storage	1 GB available disk space

Though not a requirement, XSG Studio works best with 2 monitors – your main scene displayed on one & manipulation controls on the other. Operation is possible on a single screen but dialogs overlay the scene making interactive changes more difficult.

System Preparation

Your PC must be correctly configured for XSG Studio to function correctly.

Prior to installing XSG Studio :

1. Ensure your computer meets the minimum system requirements.

2. IMPORTANT: Ensure your display driver is up to date.

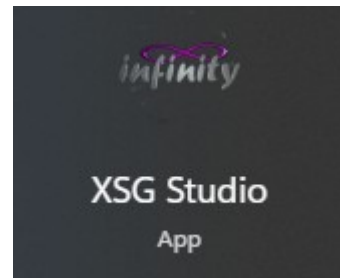
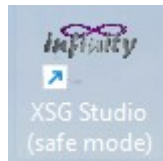
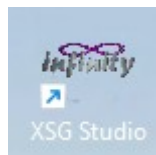
Out of date display drivers are the most common cause of system incompatibility problems encountered when running real-time 3D applications. Details of how to update your display driver can be found on your equipment manufacturer's website.

3. Ensure your audio equipment device driver is up to date. Details of how to update your audio driver can be found on your equipment manufacturer's website.

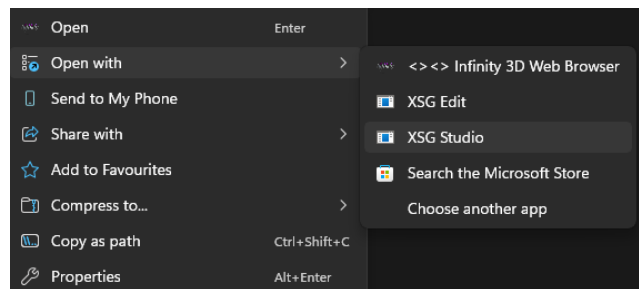
4. Install latest operating system service pack and all recommended critical updates. You can use the update facility of your operating system to check your system is up to date.

Getting Started

Launch XSG Studio via your app store or double click on the XSG Studio desktop icon. Desktop icons allow either regular (raytrace mode) or safe mode for older systems. XSG Studio can also be launched from your desktop **Start** menu.



You can open specific XSG content by right clicking on a desired .xsg file in explorer & selecting XSG Studio from the Open with > menu.



If you're familiar with other 3D content creation packages you should be able to get to grips with XSG Studio in minutes. If not, it should not take too much longer.

Before commencing work with XSG Studio, you should familiarise yourself with our Infinity 3D web browser as the control system is an extension of that system.

User Interface

The XSG Studio user interface is displayed below.

Editing controls are on the left of the scene being modified.



Figure 1 : XSG Studio in action.

The world origin is indicated by the thin axes shown on the right, above.

Basic Operations

Select : Left click with the mouse or select button on a controller.

Drag: Select button hold & move.

Multiple Select : Shift-Select allows multiple objects to be selected.

Look: Action button (right mouse) works the same as it does in our Infinity 3D web browser & toggles look mode to enable you to explore a scene.

1. Tutorial 1 : Basic Operations

With default scene open (shown above), select the heart. From the operations available on the left menu, select Copy, select Paste, select Move. The Move Gizmo (axes) should appear. Move the cursor over the Gizmo axes to move in desired direction, then drag to move the copy where desired.

You can also drag the object directly itself.

You should now have two hearts placed where you please.



Select Save, then exit XSG Studio via the Quit option at the bottom of the panel.

Start XSG Studio again – the scene should reload with your changes.

Congratulations, you have now completed your first 3D website zone.

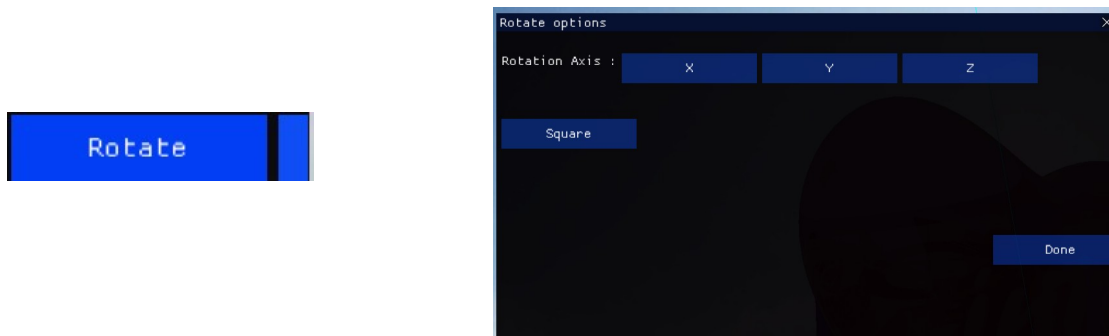
Upload to your web server using FTP tools of your choice & show the world.

2. Further Object Manipulation

With an object selected, the heart or anything else you can Scale or Rotate.

Scale : The Gizmo is much the same as the Move Gizmo – each axis can be manipulated independently, a plane can be scaled or all three axes together.

Rotate : Operates via a rolling ball rotate – a drag rotates an imaginary ball around the object.



Rotate options : The small block to the right of rotate opens the rotation options dialog, from where you can constrain rotation around a single axis or to square up a rotated object.

Move options : Like Rotate options is accessed via the small bar to the right of the main button. Move options allow you to snap movement to a grid.

Other basic operations :

Cut – like Copy, but removes original. Paste restores.

Delete (or delete key): Remove selected object(s).

Undo: Rewind previous operations.

Hide: Hides selected objects (to make it easier to manipulate obscured content)

Unhide: Restores hidden content.

Insert: Place an XSG object into the current scene (file selector opens).

IMPORTANT: Ensure the objects you are inserting form part of an easily navigated hierarchy you can upload to your web server. Files referenced from different drives on your local machine are not suitable as your web server is unlikely to have the same drive structure. Keep things well organised within a known directory structure you can upload when ready.

Link: Opens a dialog from where a hyperlink may be added or changed on the selected object.

Load: Open a new scene, discarding the current one, so ensure you've saved any changes you want first. Usually you'll open the root.xsg file for a particular scene as that defines the overall hierarchy, but you can open individual objects directly too if you so wish.

Save: Save current scene.

Save To: Save currently selected object (file selector opens).

Save All: Saves all objects in the current scene & its referenced hierarchies.

Run: Open the scene within the standard browser environment.

Quit: Exit XSG Studio.

Scene – Opens the Scene Properties dialog, which includes a scene graph editor from where you can view & modify hierarchies, rename nodes & make various scene level changes.

Scene Properties



The Scene Properties dialog features a number of scene wide configuration options
& a scene hierarchy editor/navigator.

Environment : Specify an optional 360 panorama backdrop. File type can be specified here – can be any supported texture type including images & video – select as desired from the drop down. You can also access your system file manager via the ^ icon to drag & drop or click on the selected texture type (Image as shown above) to use XSG Studio's navigator to locate your asset.

If you remove the environment, Background Color, configured immediately below will be used instead. Click the color square to the left of it to open an RGB selector.

Camera Properties : Select field of view (FOV) as desired.

Ambient Lighting : Adjust the level of global lighting desired.

Filtering : Adjust mip mapping parameters as desired.

Hierarchy Editor

Select: Click with select button (left mouse button) over the desired node.

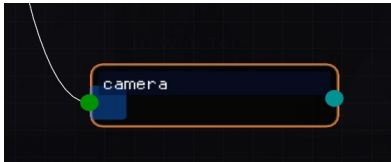
Move: Select/Drag to move nodes around the graph as desired.

Rename: Click on the node name with select button to rename, return completes.

Pan: Right button drag to move around the graph.

Zoom: Mouse wheel zooms the graph in or out.

Hierarchy Changes

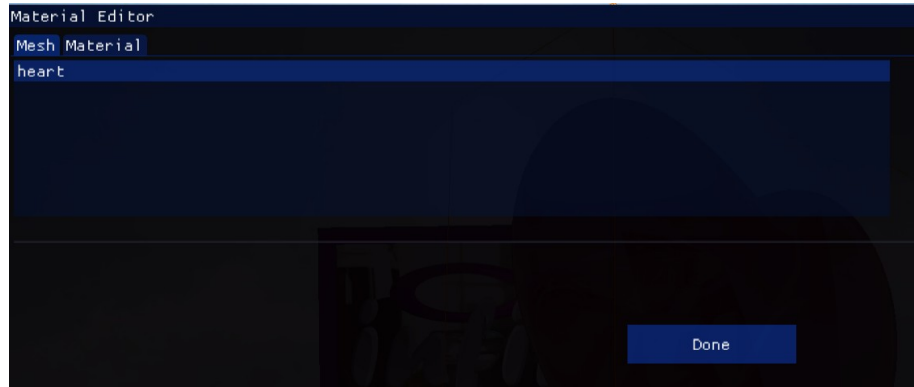


Each node has two connectors – an input on the left & an output on the right. When the cursor hovers next to either, a pad displays. Click on the pad & drag (keep button down) to adjust hierarchy by dragging to desired replacement.

Select Wire : Wires connect nodes can be selected by clicking on them.

Delete Wire : Hit the delete key on a wire to remove the connectivity. The node will then automatically connect to the root as unconnected nodes are not currently supported.

Material Editor



With an object selected, the Material Editor can be opened from the left side bar via the **Material** option. From the Material Editor, you can select the mesh within the object's geometry you wish to inspect & once selected, can click on the Material tab to select the material within that mesh to inspect.

With the Material Editor open, you can also select Object/Mesh/Material directly from the scene to go straight to it.



With a material selected, you can inspect & modify it.

Materials consist of one or more parts which build up their characteristics.
You can add or delete parts from the dialog as desired.

Each part can consist of up to 2 overlaid layers or 4 with a mixer.

Layers & mixers can be added manually by editing the XSG file directly.

Each layer supports texture coordinate scene & offset to position any texture on the surface as desired.

Tint allows each input to be color modulated.

Mip bias can be tuned per input.

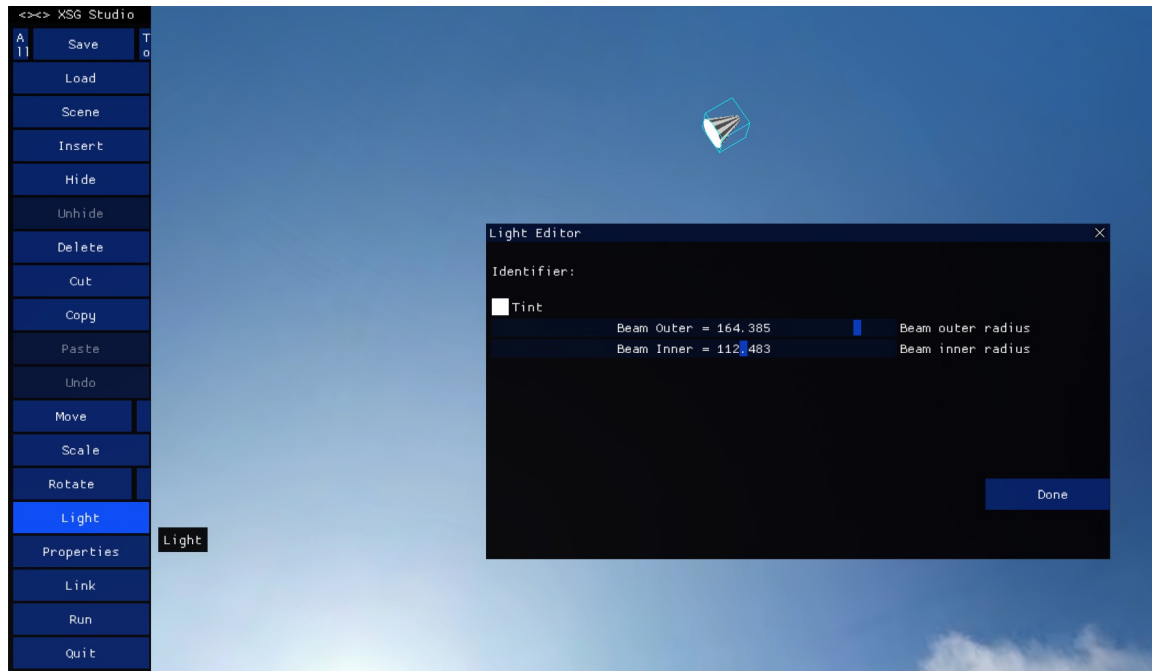
Opacity & double sided tweakables are available.

Supported options not exposed by the GUI can adjusted by editing the XSG file directly – such as mapping mode.

Material Overrides allow multiple instantiations of the same object to have different surface characteristics. You can add or modify overrides as desired.

Selecting a light or particle system reveals its equivalent editor instead of Material.

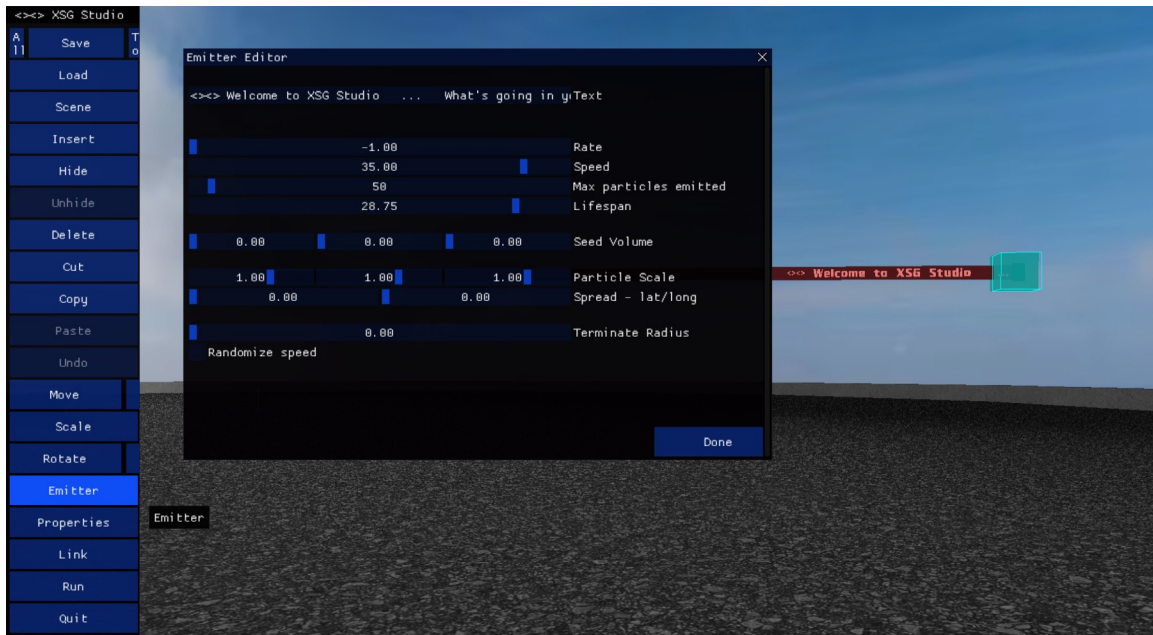
Light Editor



With a light selected, its properties can be modified in the Light Editor.

Colour & beam parameters can be modified.

Particle Editor



By selecting a particle system anchor – a cyan cube, the emitter's properties can be adjusted.

When the emitter is text, simply change it to what you wish to be written. Press return when ready to see the change immediately updated in your scene.

Other emitter properties are available to tweak the parameters available.

Going Live

When you're happy with the content you've created, upload to your web server as you would any web content, using FTP tools of your choice. Note that XSG files can be optionally binary encoded, so ensure these are uploaded in binary rather than text mode. Once uploaded, open the URL in the Infinity browser to navigate to the content to test.

Additional Tools

XSG Studio interoperates with our 3D Studio Max, Blender, Lightwave & FBX tools to deliver a pipeline from third party content create platforms.

As XSG is an open web, third party tools may be available or AI/human crafted to deliver pipelines from other tools & formats.

Announce

If you've created some great 3D web content, we'd love to hear about it.

If you're encountering issues with our software, we'd love to hear about that too.

<http://advance-software.com/discuss>