TROUBLESHOOTING

ISSUES WITH ELEMENT CRASHING/LOCKING UP:

Is your video card compatible? Check Here

Update your graphics card:
ATI Cards: http://support.amd.com/us/Pages/AMDSupportHub.aspx
Nvidia Cards: http://www.geforce.com/drivers

Update After Effects.

Mac OS 10.6.8 minimum required.

Email support@videocopilot.net

Include the following in your email:

- Computer Specs
- Order number or email used for purchase
- Brief Description of problem
- Include screenshots, video (max 10MB), or crash logs if available

LICENSING

License by entering your Video Copilot account login details into the license prompt (requires internet)

Manually install license.
Instructions Here

Prompted to re-license after you have done so? Email support@videocopilot.net

COMPATIBILITY

Operating System:
Windows XP SP3, Vista and 7, 32bit and 64bit supported.
OS X 10.6.8 and later

After Effects Version:
Element supports Adobe After Effects CS3, CS4, CS5, CS5.5 and CS6

Supported Graphics Cards:
A 512 MB Graphics card, and 1GB or more is recommended for large scenes.
Geforce 8800 or better. Including Quadro 4000 or better and ATI Radeon 3870 or better.

Element supports 256MB graphics cards but your scene complexity will be limited.

NOTE: Be sure to keep your graphics card drivers up to date for best performance.

ELEMENT 3D USER INTERFACE (SCENE SETUP)

The element Scene Setup features a custom user interface that allows you to assign 3D Objects into an output group. Object groups are like layers, giving users the ability to animate or control 3D objects independently through the Plug-in Effects Controls. This is useful when you want multiple Objects to animate or interact in the same scene

with independent controls. The user interface also serves to extrude Shapes and create custom materials.

Editing the User Interface Layout:
Each window inside element can be moved and repositioned for your screen preference. By dragging the window name bar (such as “Preview”), the window highlights the new position on release. You can also place the cursor between windows to stretch or shrink them. Drag windows around until you have found a suitable layout and Element will retain these settings for future use.

IMPORTANT: If the User Interface is not opening, hold down SHIFT and click “Scene Setup”, in the Element effects control panel, to reset the window position.

Importing 3D Models (2 Ways):
1. To open a 3D model from your drive click the “IMPORT” (*.OBJ, or *.C4D)
2. Place your 3D models inside the Element Model Folder to access them from the Model Browser.

Element 3D Model Folder Location:
Windows: Documents/VideoCopilot/Models
Mac: Documents/VideoCopilot/Models

Model Browser:
The model browser shows available 3D models that are ready to use with a single click. The model browser is helpful at organizing and finding models quickly without having to open them individually.

Renaming Objects and Materials
Double click the object or material NAME to input a new one. Or right click and choose RENAME.

Environment Map:
Element uses an environment map to fake reflections and refractions for your scene. You can choose from the built-in images or import your own Spherical map. You can also adjust the Gamma, Contrast, Saturation, UV Repeat and UV Offset from inside the plug-in.

If you set an after effects layer from the Environment drop down it will override the Environment Map from the plug-in. This allows you to use an animated map, or a file format other than png or jpeg, for the environment map.

Extrude Objects:
Element can extrude Text layers and layers with Masks using the Extrude Object. First set a text layer to Custom Layers drop-down on the plug-in side and then open the Scene Setup. Then click on the Extrude button at the top and the object will be extruded. Watch tutorial on working with extruded objects.

Applying Materials:
Element includes several preset materials inside Material Browser. The presets can be applied to Material Slots on your model and each model has UV texture controls to adjust the size and position of texture maps.

Preview Options:
The preview window allows you to view your 3D models and view material looks.

Preview window shortcuts:
1. Rotate model by Click+Dragging with the mouse.
2. Rotate environment and lighting by Right Click+Dragging with the mouse.
3. To zoom camera, use the scroll wheel Up and Down.
4. To Pan the model, drag with the middle mouse button.

5. To rotate a model off axis, hold down Shift and Click+Drag with the mouse button.

The preview lighting modes allow you to see your models in various pre-made lighting setups but inside After Effects, models will use your scene lighting instead. You can also choose to show the Environment in the background or select a color.

Draft Textures affects the preview window only and allows models and materials to be opened faster by loading lower resolution textures. However, After Effects will load the full resolution textures when the UI is closed.

The wing arrow for the preview window also includes additional options and viewing modes such as wireframe and show model info. You can also reset the viewer to the default.

3D OBJECT GROUPS

3D Object Groups:
Element features 5 independent 3D groups that allow you individual control over the replicator setting and the 3D models you specify. Once a model is added inside the scene setup, you have the ability to select an output channel. For example you might put a 3D logo into Group 1 and a concrete floor model on Group 2 so you can animate the parts individually.

Particle Replicator:
The Particle array allows you to replicate particles into the shape of a pre-defined object structure. The entire replicator array can also be moved around using the position controls. There are also controls for the size of the array shape, but keep in mind these are separate from the actual Particle properties. If multiple 3D objects are set to the same group inside the Scene Setup, these objects will be replicated randomly in your array.

Using a 3D model as my Replicator Shape:
Inside the User Interface you can choose a 3D model and select the icon for the Replicator and set the channel you want to use. Then when you choose the 3D model mode from the replicator shape, the particles will form that structure. The array uses the vertex positions from the 3D model so be careful when using objects that have too much detail so your particle count is not overloaded.

Particle Look:
Element uses 3D models as particles and these particles can be modified together from the Particle Look settings. Control things like Size Color tint, and rotation. To change the position of the object in 3D space, use the Particle replicator position.

Multi-Object Particle Settings:
Element can bring in objects that contain multiple pieces of geometry. Although the object appears as a single particle, the multi-object control allows you to animate the position of these pieces independently to create things like shattering or dispersion. You can even use these settings to take a model of an engine and then break it apart in 3D space then animate it back together. This feature

3D Particle Look:
After you assign a 3D object to a group from inside the Scene Setup, you can control how it looks, such as Size, Rotation, and Color. The randomization will affect multiple particles that are set inside the Replicator such Size and Rotation random.

Randomize Angle:
The randomize Angle feature allows you to generate a random angle for each particle based on a specific multiplier.

For example if you were creating a city using multiple buildings that need to stay at a right angle, a value of 90 degrees will allow buildings to stay perpendicular but hide apparent repeating.

Copy Paste & Reset Groups:
Each group has special buttons that allow you to copy the settings and paste them to another group or reset an entire group back to default. This can be handy for copying many settings to another group as a starting point.

RELINKING LOST OR MISSING FILES

Texture and Model Relinking:
Element will automatically search for missing files in around the directory your project file is in as well as the Video Copilot folder inside your documents. If files are unable to be linked automatically, you can add them to your scene manually.

EXPORTING 3D MODELS & MATERIALS FOR ELEMENT 3D

Element supports both OBJ and C4D file formats. Multiple material channels, UV coordinates, smoothing groups and 3D files with multiple objects as separate parts. Objects imported into Element that contain textures will need to be rebuilt by assigning the texture images to the material slots.

Supported 3D Formats:

- .OBJ exported from 3D max, Maya, Blender and other 3D Programs
- .C4D saved from Maxon Cinema 4D (Must turn on Melange in C4D file preferences)

Multiple Material Slots:
Once imported into Element, each object in your scene displays the Material slots for each of the materials saved in original 3D model. If you want to access multiple materials on a single object in Element, you must first apply multiple materials to your object inside your 3D program then re-save the model to allow Element to register the multiple material slots.

Supported Texture Image Formats:
PNG (8-bit or 16-bit)
JPG

NOTE: If you need to load a different file format: Import the file into the After Effects timeline and select it as a Custom Layer.

Exporting from Cinema 4D:
Cinema 4D users do not need to export OBJ files but instead save C4D files natively. However, in order to preserve complex geometry you must allow the additional polygon data to be available by turning on the “Melange Export” from the Cinema 4D file Preferences.

Exporting an OBJ from 3D Max, Maya or Blender:
Select a model and choose Export and select the OBJ file format. It may be necessary to export as Triangles instead of Quads for complex Geometry since Element only renders triangles, the automatic conversion from polygons to triangles may not be as accurate.

WORKING WITH MATERIALS

Element 3D offers many useful features for creating, saving and editing materials in your scene. Once an object is

imported into Element 3D, the material slots from the original model becomes available to edit and add textures. You can select the material to edit, or replace it with a material preset from the library.

Element creates material slots based on what is saved in the 3D model, but it can be useful to separate parts of a model to create separate looking surfaces. See: Creating Multiple Material slots from inside your 3D program

Applying Material Presets:
You can drag a Material Preset from the library onto any material slot of a 3D object in your scene. An instance of this preset will be added to the editable SCENE MATERIALS window. Using a preset material is a good way to learn how materials are constructed and also great starting points for speeding up your work.

Scene Materials:
Scene materials represent the materials used or imported into the current scene. If a scene material is applied to multiple material slots, the changes made to this one material will affect all instances as one. You can also click on the side arrow to “Remove Unused Materials” that are no longer needed in your scene.

Duplicating Materials:
You can right click and duplicate a material to create a unique copy. Duplicate and replace, will duplicate the material and replace the current one with the copy.

Saving a Material Preset:
If you would like to reuse a material in future projects you can RIGHT CLICK on the material thumbnail and choose “Save Material Preset”. This preset will be available in your preset library. It is a good idea to first copy any image maps to the Element Material folder so they will stay linked up.

Material Settings:
Element 3D Offers many familiar settings for creating a variety of surfaces such as concrete, metal, plastic and more. Texture slots are also available when you need to use images on your shader instead of solid colors.

Texture Slots:
1. Diffuse: This is generally the main color of your materials surface
2. Specular: The specular channel has a dual purpose of controlling the amount of specular and reflectivity the surface can receive. We recommend using a single map to control both settings to minimize excessive memory usage when possible. There is an option to ignore the reflectivity and refractivity if you plan to use the reflection/refraction map exclusively.
3. Reflection/ Refraction: This slot controls the amount of reflection or refraction on the surface is able to receive. This channel will work in combination with the specular map and block out additional reflectivity.
4. Illumination: This slot allows you to use an illumination map for areas that you want to appear illuminated. Once the map is set be sure to increase the illumination intensity.
5. Normal Bump: This channel allows you to use a special surface map called a Normal Bump to create textured surfaces that are affected by lighting. To adjust the intensity of the Normal bump, you can decrease the opacity of the map next to the map slot.
6. Occlusion: This texture channel will multiply dark shading on top of the diffuse channel. Great for being able to fine tune the ambient occlusion texture pass with the opacity amount.
7. Environment: This texture slot allows you to specify a specific environment map other than the default one to reflect. One purpose would be to have a blurry version of the map for one material and a non-blurred version on another material in the same scene to create objects that appear more chrome and objects with blurry reflections.

Advanced Functions:
Force Opacity:
Using the openGL standard we are not able to generate true opacity for objects but we have built in way to lower the

opacity of materials to create a fake glass effect. The order of elements behind the glass may not always be accurate so use under controlled scenes.

Matte Shadow:
The matte shadow option is available for all materials so that you can turn any object invisible to the camera but still receive ambient occlusion shading.

Matte Shadow Obscuration:
You can also use the matte shadow option to obscure 3D objects for compositing in After Effects. This would work similar to a layer obscuration.

THE ANIMATION ENGINE

Using the Animation Engine:
The animation engine allows you to intelligently blend, or interpolate the “STATE” of objects in one group into the “STATE” of objects in another Group. For example if the objects in Group 1 form a ring and the objects in Group 2 form a box, the animation engine will animate the position from the ring to the box.

Blending Properties: (What stuff will interpolate?):
- Particle Transform: Position, Rotation, Scale, Scatter, Position Noise
- Material properties of 2 identical models with different material settings
- If 2 separate models are used like a Cherry and a grenade, the objects will “Cross-scale”
- Multi-Object settings will also interpolate

Group Selection:
Use the group selection allows you to choose what 2 group channels you want to animate between. The particle count will automatically be set to the Start Group amount since the animation engine requires the particle count to be the same for both groups.

Sequence Mode:
- Particle animations can be animated using various transition types such as Directional, Radial, Random or Linear.
- Directional: Particles animate in a single direction that can be controlled with the Yaw and Pitch.
- Radial: Particles animate in a spherical pattern. You can control the position and change the direction from Outward to Inward.
- Random: The random transition mode moves particles in a random pattern.
- Linear: Particles animate altogether at the same time.

Animation Type:
In addition to using the Blend amount you can also use the Smoothness and Randomness to refine the speed of the particles.

Dual Animation Mode:
This mode allows particles to start animating with a specific Blend mode like Radial but finish using a different sequence like Direction. You can also use the dual sequence mode with directional to have 2 separate blending directions for outgoing and incoming particles.

Time Delay Options:
The time delay option allows you to retime certain properties so that they are achieved at a different time than the other properties. For example, you could make it so the material blending happens first and then the position of the particles interpolates next.

FAQ

Does Element Cast Shadows from lights?:
Not yet but we have this on our road map!

Does Element allow animated 3D Objects?:
Not yet... Since OBJ files are very slow to load, an animated sequence would cause memory and performance issues so we decided to test more intelligent formats for bringing animation into Element that is faster and more robust.

Does Element have a physics system:
Not exactly. Element is an array based plug-in that works by having an absolute particle count and positions. Our unique Animation Engine is able to do amazing things when it knows exactly where particles are at no matter what. This system can be used to achieve many creative animations without sacrificing the control as in simulation based systems. Since we do not have a traditional particle emitter, particles do not automatically animate over time

Why are my shapes looking squished?
Turn your aspect ratio in your composition settings to square pixel

Why is my Element looking flat and not 3D?
Make sure the layer that your Element 3D is applied to DOES NOT have the 3D switch on.

Why can't I rotate around my objects?
Go to your Camera Settings and make sure that it is set to a Two-Node Camera and NOT a one-node camera. This will allow you to rotate around a "point of interest"

Also make sure that you have "live update" on in your comp

Why aren't all my objects in my scene?
Element groups work in two ways: Either a group is controlling one single object, or an array of objects. For example, if you have 3 objects set to a group, but your particle number is only set to 1; you will only have one object in your scene. If you have 3 objects and a particle number of 5; you will have an array of 5 randomly generated objects in one single group.

If you have two objects and would like to control them independently, you must designate one of them for group 1 and the other for group 2,3,4, or 5.

Why aren't my textures being imported into Element?
Element does not import texture maps. It imports material slots for you to rebuild your materials and textures in Element. You can right click your model to save a model preset in Element so you do not have to rebuild them again for future projects.

How do I get objects to relfect each other?
Element does not support "ray-traced" relections. So objects cannot reflect each other. This is for sake of speed on the GPU. It is possible for this to be "faked" in certain scenarios. (ie text being duplicated, rotated, and blured to appear to be reflecting the on the ground)

Why is my model gray and not mapping textures correctly?

- Make sure that the model has been exported out of its 3D program with "normals"
- In the Element model options in the scene interface, you can turn on the "auto normals" switch and adjust the

"edge threshold" until it looks correct.

Why can I see through some polygons?
Make sure that your model doesn't have any backwards polygon normals
You can also go to your material options, and turn on the "draw backfaces" switch, and this will render the backsides of polygon normals

LINKING EXPRESSIONS WITH ELEMENT

Element can be used with expressions for the purpose of connecting values or tying an object group to a Null Object.

IMPORTANT:
Linking Parameters inside Element:
When you enable an expression by alt-clicking a stopwatch, you must hold down ALT as you drag the pickwhip to connect other parameters such as position or rotation.

Since Element has many repetitive options for each group, the ALT function will ensure the parameter NUMBER is used to ensure no naming conflict.

RENDER SETTINGS

Lighting:
By default all lights have infinite falloff but you can use the falloff setting to give lighting a more natural look when lights are farther away from your objects.

Motion Blur:
To enable motion blur for Element turn on the layer switch for motion blur and then toggle the motion blur switch on the timeline. The motion blur samples will smooth out fast motion but take longer to render.

Fog:
The Fog render effect adds depth to large scenes and create unique lighting effects. You can control the START DISTANCE of the Fog and the RANGE which controls the falloff. You can have a negative Start Distance and Range to create interesting lighting effects.

Depth of Field:
Element features several modes for generating Depth of field and one mode that visualizes the focus plane with a red highlight.

- **Multi-Pass Depth of Field:**
  This mode renders multiple passes of your scene in order to generate 3D depth of field that most accurately matches the AE Camera Blur amount. However it is also the slowest for complicated scenes. Increasing the quality will increase the render passes exponentially. It is recommended to use the lowest quality that produces adequate results. NOTE: multi-pass renders your entire scene so using multi-pass depth of field with motion blur will slow down rendering dramatically.
- **Pixel Blur:**
  This mode uses a post processing lens blur that works well and renders consistently. Meaning the speed of the blur is not dramatically affected by the complexity of the 3D scene unlike the Multi-Pass mode which requires repetitive rendering of the scene.
- **Preview and Continuous Blur:**

These modes are very fast but not accurate, and they can create some strange artifacts on small objects. It does work great for testing and using in low featured 3D objects or surfaces that do not have a lot of detailed mesh.

- **Focus Indicator:**
  This is a visual representation of the depth of field that shows your focal plane represented by a red tint. The more red, the more in focus.

Ambient Occlusion (SSAO):
Ambient Occlusion is used to simulate soft shading without casting shadows. Controlling the radius and intensity will help you achieve a specific look but there are many advanced settings for refining the shadow look.

Samples: Controls how many samples are calculated per pixel.
Radius: Controls the search distance to calculate the shading and makes the shading tighter or broader.
Depth Influence: The ambient occlusion works in screen space but the depth influence varies the shading radius so that objects far away that get smaller do not get lost.
Fog Influence: This controls how intense the ambient occlusion is when fog is enabled.
Illumination Influences: This controls how much the ambient occlusion affects illuminated materials.
Adaptive Blur: The adaptive blur settings allow you to smooth out the samples based on the direction of polygons in order to keep the shading consistent.

Output Settings:
Element features several advanced image processing settings that balance performance and quality.

- **Compress Textures:**
  If you have noticeable banding in textures, you can uncheck this to use full quality textures at the cost of increased GPU memory usage.

OPTIMIZING PERFORMANCE & RENDERING

Element uses all the tricks in the book for rendering and optimizing, but when scene complexity increases it is important to know

Update GPU Drivers:
Check for updated drivers before using Element, there are many stability and performance changes in these GPU drivers from Nvidia you don't want to be without!

CPU rendering VS GPU Rendering:
On the CPU a more complicated scene will just take longer to render, but on the GPU, if the scene or memory requirements are too high, the GPU will crash so it is important to manage your GPU's resources by closing unnecessary GPU programs and watching texture memory usage. A graphics card with 2GBs of VRAM will allow you to create more complex scenes compared to a card with only 512MBs.

GPU Resources:
Many programs such as Photoshop and 3D games use GPU resources so it is a good idea to close unnecessary programs to get the most out of Element.

Memory Management:
Image textures will fill up your graphics card memory fast if you are not careful. Using fewer texture maps and lower resolution files will help keep memory available for rendering.

Motion Blur & Depth of Field:
Multi-Pass depth of field can be slow to render in complex scenes. Using motion blur with depth of field will make the scene 8 times slower to render. When working you may want to toggle Depth of Field off until final rendering to keep the responsiveness of the Plug-in.

Closing or limiting GPU based FX:
Since computers and software often take advantage of the GPU you may want to limit unnecessary usage to improve your Element performance so try to close programs like Photoshop when not using them to preserve memory consumption. The Element UI show the memory used and memory available on the GPU but this is not the memory Element is using but the total memory the card is using altogether.

Lower Multi-Sampling:
The multi-sampling mode can improve memory performance on older or less powered cards by using less memory to render. If you are using extremely large comps it may be the only way to render them on the GPU due to memory limitations.

Restarting is always a good idea:
If your GPU is overloaded or you want to freshen it up, just restart the computer. It can help!

Keep the texture memory down:
If you do not have a lot of memory on your graphics card or you have a complex scene with many texture maps, try to avoid Custom and Animated Maps. Load still images directly into Element so they are only cached once.