2.0.0

Release Date

April 12, 2017

This version uses the Arnold 5.0.0.0 core.

On Windows, C4DtoA 2.0 and later require the Visual Studio 2015 redistributable

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FEATURES

- New shaders:
  - Standard Surface: an energy-conserving, physically-based "uber" shader capable of producing many types of materials and looks. It includes a diffuse layer, a specular layer with complex Fresnel for metals, rough specular transmission for glass, subsurface scattering for skin, single scattering for water and ice, a secondary specular coat, and light emission. Compatible with the Disney principled material (aka PBR shader), it makes it easy to transfer materials from other applications. Efficiency has also been improved, as the shader takes advantage of new GI sampling techniques for faster rendering, and also supports per-light AOVs. The standard shader is still available but considered deprecated.
  - Standard Hair: a physically-based shader to render hair and fur, based on the d'Eon model for specular and Zinke model for diffuse. Realistic results can be obtained by setting a few simple parameters for the base color, roughness and index of refraction. Realistic tones for human hair can be easily achieved with controls for not one but two types of melanin. Unbiased, hair-to-hair multiple scattering is supported, and is efficient enough to be used in production without resorting to dual scattering or other tricks. The hair shader is still available but considered deprecated.
  - Standard Volume: a physically-based volume shader that simplifies rendering of smoke, clouds, and explosions, without the need to create convoluted shading networks. It provides independent control over volume density, scatter color and transparent color. Blackbody emission is used to render fire and explosions directly from physics simulations. Each component can be controlled by a volume channel coming from the volume object, with other parameters acting as multipliers on the channel. Optionally channels may be entirely procedurally driven or have apparent resolution added via other shaders for added control. The volume_collector shader is still available but considered deprecated.
  - Color Jitter: can be used to generate random colors within a specified gain, hue and saturation range. Colors may be randomized per face, object, procedural instance or user data, or a combination.
  - Triplanar: can be used to quickly map image textures without needing UV coordinates. The texture is projected onto the object from the 6 sides, and smoothly blended together at the seams.
- OSL shader support: Open Shading Language is an advanced shading language for production GI renderers. OSL shaders placed in the shader search path are automatically registered as Arnold shader nodes, with their parameters converted to Arnold parameters. Once loaded, they can be inspected, instantiated and linked in exactly the same way as C++ shaders.
- New VR camera: generates stereo views suitable for virtual reality in a variety of formats and projections.
- Closures: surface, hair and volume shaders now output closures rather than colors. A closure type shader can not be connected to a color type shader input. This results in splitting up into two variations of various shaders, one for working with closure type shaders and one for working with textures (color type shaders). These includes the mix_shader and mix_rgba, ray_switch_shader and ray_switch_rgba, switch_shader and switch_rgba shaders.
- New bump and normal map workflow: bump2d, bump3d and normal_map shaders now output a normal vector that can be linked to new `normal` parameters in standard_surface, lambert, ambient_occlusion and utility shaders. They no longer function as passthrough shaders.
- Color management: Arnold now natively supports OCIO for better handling of input and output color transforms, and can be extended with custom color management nodes.
- Light group AOVs: surface shaders now natively support light group AOVs, previously this feature was only available for volume shading.
- Light path expressions: used to write lighting components into separate AOVs. No longer should individual shaders define AOVs for direct/indirect light and various layers, rather a regular expression syntax is used to define the subset of all scattering and emission events in the scene that should be written to each AOV. Built-in AOVs are available for the common cases. LPEs provide power and flexibility for creating AOVs to meet the needs of production.

ENHANCEMENTS

- Noise shader: can now output colors, in `scalar` mode by blending between `color1` and `color2`, and in `vector` mode with a separate noise signal per color channel. A new `time` parameter can be used to smoothly vary noise over time. Has a new `uv` space option to use the object's local UV coordinates. In addition, an arbitrary coordinate space can be specified manually by linking another shader into the new `P` parameter.
- Utility shader: has a new `metal` shading mode, and a `roughness` control has been added that affects plastic and metal modes.
- Skydome light camera visibility: new camera and transmission parameters set the amount of light contributed to camera and specular transmission rays. It is no longer required to use a separate background shader and so the sky shader is considered deprecated.
- Quad and spot light: a new `roundness` parameter, going from a square shape at 0, to rounded corners, to a disk shape at 1. Quad lights also have a new `soft_edge` parameter to soften the edges, similar to the `penumbra_angle` for spot lights.
- Support for OpenVDB 4.0
- Detach material preview in the network editor: the editor has a new option in the **View** menu to move the material preview to a separate dockable dialog. Also the shader tree can be hidden which saves more space for the node graph.

OTHER CHANGES

Visual Studio 2015 redistributable: In Windows, Arnold now requires the Visual Studio 2015 redistributable. If you don't have the redistributable, C4DtoA will not load. You can download the installer here: https://www.microsoft.com/en-us/download/details.aspx?id=48145

API

- There are modifications in the C4DtoA API which require third-parties to recompile their C4DtoA extensions.