

HtoA 3.2.0

21 October 2018

This is a feature release, bringing round corners, alembic procedural improvements and many core fixes.

Installation

1. Get the install files on [Solid Angle Downloads](#).
2. Follow these [installation instructions](#).

Compatibility

This release uses Arnold 5.2.1.0 and OpenVDB 4.0.0.

Binaries available for the following Houdini, Houdini FX, Houdini Indie and Houdini Education production builds:

- 16.5.536
- 16.5.571
- 17.0.352

and for the following platforms:

- Linux x86_64 (H16: gcc4.8 and H17: gcc6.3)
- Windows 7 x64 (H16: vc14 and H17: vc14.1)
- Mac OS X 10.8+ (clang7.3)

Please note that Houdini Apprentice does not support third-party renderers and thus cannot run HtoA.

Enhancements

- **Round corners shader:** This shader modifies the shading normals near edges to give the appearance of a round corner. The simpler way to use this shader is to connect its output normal to `standard_surface.normal` or `standard_surface.coat_normal` ([core#7517](#))
- **Normal map blending:** A new `normal_map` blending mode was added to the `layer_rgba` shader. This makes easier to create fine details and is more efficient than connecting multiple bump or normal mapping nodes. ([core#7523](#))
- **Faster adaptive subdivision:** Faster adaptive subdivision due to more efficient computation of irregular patches: x2 speedup in some cases. ([core#7344](#), [core#7444](#), [core#7488](#))
- **Faster operator evaluation:** Operator evaluation is now up to 20x faster on large scenes thanks to expression caching and graph pre-processing. ([core#7001](#), [core#7508](#))
- **JSON log file additions:** The JSON stats file has more info, such as the hardware used. ([core#7196](#))
- **LPE image metadata:** Output image metadata now includes the full light path expression for each layer. ([core#7499](#))
- **Alembic archives:** The Alembic procedural will reuse alembic file handles, keeping up to 8 file handles open for better cache handling in parallel node initialisation. ([core#7071](#))

Incompatible changes

- **Range shader gain:** The gain parameter on the `range` shader is now inverted for consistency with the `AiGain()` API function ([core#7477](#))
- **JSON stats change:** The JSON stats format has changed in order to resolve some ambiguities with nested fields. ([core#7074](#), [core#7530](#))
- **JSON stats version:** The JSON stats file now has a "JSON log version" field that will be incremented each time a breaking change is made to the JSON stats format. ([core#7530](#))

Fixes

- Alembic packed primitive translation optimisations motion ([htoa#1023](#))
- Optimisations for rendering multiple alembic primitives ([htoa#1106](#), [core#7493](#))
- MaterialX generated shaders are scoped under their node graph names. ([core#7443](#))
- Unexpected missing parameter warning on custom procedural instances. ([core#7548](#))
- Copy id to child alembic nodes. ([core#7442](#))
- Shaders should check that samples are always strictly positive. ([core#7573](#))
- Alembic geometry has incorrect transform with `make_instance` enabled. ([core#7567](#))
- Alembic transform/deformation motion blur mismatch. ([core#7539](#))
- The first parameter of OSL nodes is not initialized to the default value. ([core#7524](#))
- Remove the OptiX dependency on mac. ([core#7520](#))

- User parameters not properly propagated or read from parent procedural. (core#7516)
- Alembic Crash with arbGeoParam array property. (core#7507)
- Autobump (and bump) disappear for some pixels. (core#7505)
- Alembic procedural expansion with make_instance on using an object_transform parameter. (core#7501)
- Noice: when looking for feature AOVs prioritize AOVs with the correct filter. (core#7497)
- Kick -laovs should not grab a license. (core#7495)
- Add sheen AOV labels. (core#7492, htoa#1105)
- Texture baking: small triangles can cause artifacts. (core#7480)
- Gain function in range shader is inverted. (core#7477)
- Alembic object transform fix. (core#7475)
- Curves memory report missing some entries. (core#7474)
- Shadow group is not inherited in ginstance. (core#7472)
- D'Eon BCSDf must be evaluated when `base_color` is small. (core#7470)
- Render callback does not support an "empty" callback. (core#7467)
- MaterialX: Supported parameter arrays are not processed by operator and node definition generation. (core#7466)
- Adaptive camera samples higher than expected. (core#7461)
- Thread safety of alembic procedural tokenize function. (core#7456)
- Cell noise time not evaluated when linked. (core#7445)
- Volume AOVs: shadow rays interfere with new Z and ID AOVs. (core#7432)
- Volumes: register new AOV volume_Z. (core#7431)
- Transform motion in procedural that only contains lights can give invalid lights. (core#7422)
- Make flatness check for quad_light more robust. (core#7419)
- Noice: skip denoising AOVs with no associated variance. (core#7418)
- Noice: support additional channel suffixes and warn if the suffix is unsupported. (core#7417)
- Noice: incorrect handling of variance AOVs in a separate file. (core#7416)
- Noice: issues with certain crop windows combinations. (core#7415)
- Alembic files with single entry array attributes should be considered not arrays. (core#7413)
- Metadata lexer should ignore more than three # in a row. (core#7388)
- Nested timing stats are ambiguous in json output. (core#7074)
- Recover from failed optix launches. (core#6727)
- Export full path instead of node name when writing to .ass while expanding procedurals. (core#6221)
- Alembic transform incorrect with motion blur. (core#7579)
- Alembic with make_instance and parallel node init enabled causes disappearing geometry. (core#7478)
- Alembic crash with make_instance enabled and changing frames. (core#7446)

See also the [Arnold 5.2.1.0](#) release notes for the full list of core enhancements and fixes.