MtI

-

User Documentation

beta 3 12/19/12

Table of Content

Introduction

Mti is a scripted exporter for Maya, to Indigo RT and Indigo Renderer standalone applications.

Although currently developed on a Windows platform MtI may work to an extent on Unix based OS.

In all cases you are kindly invited to contribute by your questions, requests, constructive critics and bug reports likewise in the Maya sub-forum:

http://www.indigorenderer.com/forum/viewforum.php?f=11

Note

This documentation is a WIP at a beta stage and is therefore lacking and subject to changes.

Installing MtI

Version matching

In general the Indigo version should be equal or superior to the MtI version.

You are encouraged into testing the latest Indigo beta available on the indigo News and Announcements forum. You can get the last stable Indigo release in the Downloads section of the site.

Installation

1. Get and install Indigo (see Version matching above).
2. Extract the MtI archive content anywhere on disk.
3. Start Maya.
4. Open the Script Editor (**Window > General Editors > Script Editor**).
5. Source the file *mti_installation.mel* (**Script Editor > File > Source Script...**) located into the *MayaToIndigo* directory you just extracted to disk. This will run the installer.
6. Follow instructions and complete the installation.

7. Seek for the brand new Indigo shelf. Upon a new Maya session, one shelf button must be pressed in order to initialize MtI. Initializating MtI will change the current renderer to Indigo.

8. Upon request: browse into the Indigo installation directory to locate the application. There's no file to select at this stage, nor showing up for the matter. Once there press OK.

You are set to render with Indigo.

Notes

- Do not alter the unzipped files structure before installation or the installer will not be able to locate the subsequent files !

- For an automated install, it is mandatory to source *mti_Installation.mel* by browsing to it.
-

- Experimented users can install all files manually to their discretion.

- The installation procedure must be reapeated with each Maya version MtI is intented to run with.

- The extracted files can be removed after successfull installation(s).

Thanks for reporting errors experienced during installation.

Initialisation

After a successful installation, the Indigo renderer will be loaded for the current Maya session, and the exporter initialised for the current scene, with no further action.

During the subsequent Maya sessions, it will be required to click any of the three Indigo shelf buttons in order to register Indigo as an available renderer.

Using the Indigo shelf will also initialise MtI for the current scene by adding to it a scriptNode named *mti_settings*.

While using the Indigo Editor window or during export, the required extra-attributes will be added to the relevant geometries, cameras and shading nodes essentially.

The indigo shelf

As of MtI 3.4.6.0, the Indigo shelf has three buttons. Clicking any of these shelf buttons will initialize MtI for the current scene.

Indigo Editor

See the Indigo Editor section.

Sun

The sun is defined as a directional light and is currently the first one found by the exporter if several exist simultaneously in the scene. If there was no directional light available this shelf button will create one, or select the current sun otherwise.

Include IGM

See the equivalent MtI menu item next page.

The MtI menu

Assign IGM to selected…

Applies an external Indigo material definition to the selected geometries by browsing to an IGM file, through a new Maya material. The linking material will simply be created if there was no valid selection.

Note that at this time, only IGM files are supported for linking. PIGM files are to be extracted to disk as a normal zip archive would, in order to expose the IGM file to link to.

Make material XML

Pre-export the material XML. The material definition is then stored into the material node *notes*. This method can be used to pass manually parameters that MtI might not manage.

Purge selected meshes from disk

Given a selection of polygonal geometries, erase their OBJ & MTL counterpart from disk. This will mark the selected geometries as "new" and will force their rewriting when the option "only new" (geometries) is checked on (in **Render Globals**, **Exporter** section).

Create Node

The three Indigo shading utilities. plus the monolithic indigoShader and the section plane. While the first four can be created from within the usual createNode interfaces, the later is only available from this menu.

Add MtI Attributes to

It may be necessary to tag some nodes prevently in order for some MtI options to function properly. Probably obsolete.

Renderer Path

Meant as the "Indigo paths" window, it is currently dumbed down to the Renderer Path Window.

Force initialization

Initialisation failsafe. Please report if you needed to use this.

Access advanced settings

Selects mti_settings, the scriptNode holding all scene-specific, MtI related attributes. Even those unused sometimes.

Export

And render, by default.

The Indigo Editor

Maya as seen by MtI

The indigo editor was the centric editing asset of MtI. It is designed to provide support to the user under certain scenari, and generally to ease editing toward Indigo.

It has two basic modes of functioning: interactive and static (frozen). The mode by default is interactive, it can be changed to frozen from the [editor menu] described below.

When frozen two buttons are added to the editor window:

- redraw: redraws the current UI for the edited object. Might be used, for instance, after a texture was dropped into one of the editor slots.
- load: update the editor UI to the current selection.

A third mode for the Indigo Editor is the error report mode:

In error report mode, the editor is automatically frozen. A message is displayed with one or more buttons beneath, depending on the available options. Clicking a button restores the editor to it's previous dynamic state, wether frozen or interactive.

Editor menus

Window

Freeze > Indigo Editor

Puts the Indigo Editor into a static (frozen) state.

Freeze > Attribute Editor

Freezing the AE is equivalent to unchecking it's "Auto Load Selected Attributes" option.

Presets

The common Maya presets system. Specifically recommended in use with Indigo nodes (indigoSpectrum, indigoMedium, indigoText. See the [SHADING NODES] section). This menu will not show if the editor target is inadequate (a transform, notably).

_

Export

Param

Params in Indigo are user control for ISL shaders.

They are user defined attributes wich names start with param, *ie paramHeight*.

This menu and params themselves are available only for the supported surface shaders and indigoText nodes.

Name and navigation bars

Right below the Indigo Editor menu are two text lines. The top one is displaying the name of the current Editor target. The one below is listing the nodes connected.

It is important to know that each of these bars has its own marking menu. They provide a mean to quickly navigate between meshes, shaders and parameters. Hold the right mouse button in order to pop the marking menus up.

Camera

The following attributes will affect the Indigo camera:

- Angle of View
- Focal Length
- Film Gate (Presets, custom Horizontal Camera Aperture)

Extra Attributes

Image

Diffraction

none

traced

post-process

Lights

There are two lighting methods available to Indigo:

Emitting surfaces (fixed light sources) are geometries with an emiting material applied

Environments are defined per camera.

Note: It is strongly recommended to use the Indigo Editor during the lighting and shading stages.

Shading nodes

The nodes below are supported by MtI, and give access to the related Indigo features:

lambert

diffuse

Your lambertian shader.

Oren-Nayar

a variant of the diffuse material with a parametric roughness.

diffuse transmitter

Aka fastSSS. Ideal lambertian transmitter material. Light is scattered forward only instead of bumping onto the surface.

Meant to be added to another material type by 'blending' in order to add back-scattering, wich the diffuse transmitter lacks totaally. In this case both blended materials may share the same albedo, granting the additional material with transluscence (see the layeredShader section. NB: the blend node type in Maya does not relate with blending materials for Indigo).

Works best on single sheets (lampshades, curtains).
Supports a medium definition. Optional, however when used the mesh must systematically define a closed volume. See the indigoMedium section.

phong

Phong

Index of Refraction over an albedo.

metallic

Using specularColor in place of IOR

nkData

Captured metals and alloys data. Be aware that all data files shipping are not metals, and those wich are not are also not supported by Indigo.

indigoShader

All of the above, plus the null material wich is also covered by the layeredShader below, and:

Specular

Glossy transparent

layeredShader

The blend material in Indigo.
Compositing flag: "layered Shaders" exclusively.
Connecting no material means 'null' material.
Connecting one single material grants it transparency. It must still be the layeredShader applied to the geometry, though.
You can not chain layeredShaders, all dependent materials must be stacked into the final and one layered shader applied to the surface.
Bottom of the stack on your right (need image).

indigoSpectrum

The indigoSpectrum node provide access to the different spectra types that Indigo can use. In its simplest acceptation, a spectrum is a color.

The indigoSpectrum node can be connected to almost every color attribute (called shading parameter), and for many purposes:

albedo, medium absorbtion, sss, phase function, blend parameter...

Blackbody

Note that the blackbody gain is ignored unless if the default emission scale measure is used (W/m²).

Blackbody is specially adapted to define the base emission (ambient).

Uniform

A fixed float value. Can be used as transparency when the material is part of a layeredShader.

Peak

Tabulated

indigoMedium

Connect to the medium attribute of the indigoShader and lambert nodes.

indigoText

Animation

For an animation sequence, MtI will first export all frames then render them sequencially.

Halting frame rendering

Rendering an animation sequence is automatised, and this implies that the renderer must stop at a certain point for a given frame.

There are two halting options available, usable cojointly. These options will also work for a single frame.

Halt samples

This option is primarily recommended for animation. It will ensure continuity in the grain density throughout the sequence.

Halt time

The rendering for the current frame will stop after the number of seconds specified.

The grain is susceptible to changes from frame to frame due to the light scenery discrepancies between them.

Recommended for test and tightly scheduled jobs.

Motion blur

Motion blur works automatically on keyframed objects, including the rendering camera.

Outputs

The typical Indigo scene

You have currently little options to customize output paths upfront, some more can be accessed in the Attribute Editor by selecting the advanced options item from the MtI menu. Not all will be used though (wip).
The paths below are relative to the current Maya project directory.

Typically, and Indigo scene is composed of the following elements:

[scene name].igs:
the Indigo scene description, XML-based. Including essentially the environment(s), camera, materials descriptions and (external - OBJ) meshes referencing, and transformations.

objs/[current frame number]:
the OBJ files. Whatever the scene and by default, one subfolder per frame and per project. This path can however be edited on a scene basis, either relatively to the project or as an absolute path.

Additionaly, baked procedural textures will be placed in the location specified by the 'sourceImages' file rule of the current project (absolute or relative). If no path is set, the project directory will be used.

Known limitations

- fluidTextures2d are not supported. In general dynamic objects must be converted to meshes (recommended) or nurbs before rendering with Indigo.

- shading switches are currently ignored.

- plugin nodes shading in viewport is inexistent.

- Limited rotation support for instancers

- ...

Credits

Project initiated by the Indigo users Arneoog and MattTheDude, reforged by Doug Hammond (dougal2) and currently maintained by Adam Penalver (CTZn).

Thanks to Benedikt Kircher (bkircher) for her participation.

Thanks to L(?) and Guillaume Maurras for the respective historical contributions.