Allegorithmic - Substance Engine - Readme 1st

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Version

Alpha package
Document version 1.0 (11/12/08)

PC Binaries compiled with: Microsoft VC2005 SP1.

Introduction

Welcome to the Substance Engine package!

The Substance Engine allows on the fly generation of textures authored by the Substance Editor.

This package contains:

- Substance engine headers.
- Substance binaries (DLL) for each platform installed.
- Doxygen documentation.
- Tutorials for each platform installed.
- Visual C++ CRT redistributable files.

Other files can be included in this package depending on the platforms available/selected at installation time. Please consult the other readme files in the **./doc** directory.

Software requirements

Microsoft Windows 2000/XP/Vista.

For tutorials build (optional):

- Visual Studio 2005 or above.

Hardware requirements

Hardware requirements depends on the platform installed. Please consult the platform specific readme files.

API Documentation

The documentation for the Substance API can be found in **./doc/html/index.html**.

Briefly, the most important files of the API are:

- **./include/substance/handle.h**: Handle structure and related functions definitions. The *handle* is the main object used for texture generation.
- **./include/substance/context.h**: Context structure and related functions definitions. A *context* contains one or several *handle*.
- **./include/substance/texture.h**: Platform specific texture structure. Result of computations are *textures*.

Tutorials

The tutorials expose several Substance Engine integration use-cases for each platform.

The **blend** platform is a special platform that hides the real implementation from the caller. The textures are returned in system memory.

The different tutorials illustrate:

– Generation of all textures at a stretch.

– Streaming and time-slicing computing strategies.

– Tweaks.

– etc.

The first tutorials (DDS generation) need a path to a **.sbsbin** file as a command line argument. These files can be found in **.\tutorials\media** or can be compiled with the cooker (see **readme_cooker.pdf** for further information).

Directories contents

- **.\bin**: Compiled Substance DLL, tutorials and cooker (if selected at installation time).
- **.\doc**: Readme documentation.
- **.\doc\html**: The Doxygen documentation for the Substance API.
- **.\include\substance**: The C/C++ headers of the Substance API (multi-platform).
- **.\lib**: Substance API compiled libraries.
- **.\redist** : Visual C++ CRT and platform specific redist. files.
- **.\tutorials**: Tutorials sources for each platform.
- **.\tutorials\media**: Examples of cooked Substance files (.sbsbin) that can be used in tutorials.

Texture generation HOWTO

1. Initialize a *SubstanceContext* (Platform dependent).
2. Create a *SubstanceHandle* from the *SubstanceContext* and a buffer that contains the *Substance* cooked data to render.
3. Set up the generation parameters, select the textures to render, fill in the desired function callbacks, and fill in the inputs (if any).
4. Launch the generation process (synchronous or asynchronous).
5. Grab the generated textures progressively (via a callback function) or at a stretch at the end of generation.
6. Release the handle.
7. Release the context.

Miscellaneous

- All PC binaries in this package are compiled with the DLL multithread CRT (debug **/MDd** and release **/MD**). Please contact us if a different CRT version is needed (compiler version or static CRT).