Allegorithmic - Substance Engine - Readme Direct3D9 PC

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Version

Alpha package
Document version 1.0 (12/09/08)

PC Binaries compiled with: Microsoft VC2005 SP1.

Introduction

This document contains specific informations about the Direct3D9 PC implementation of the Substance Engine.

Software requirements

Microsoft Windows 2000/XP/Vista.

For tutorials build (optional):

- Visual Studio 2005 or above.
- DirectX C++ SDK (tested with March 2008 version).

Hardware requirements

The CPU fallback for the Substance Engine is not available yet. Therefore, a shader model 2.0a capable graphics card is required to run any texture generation process.

Non-exhaustive list of graphics card known to be compatible with substance:

- GeForce 6500 or above.
- GeForce 7/8/9 series.
- ATI x1XXX, HDXXXX or above.
- Intel integrated graphics GMA 3x00 and X3x00 series.

Direct3D 9 States

Expected default values initialized render states (*SetRenderState*):

- `D3DRS_ALPHABLENDENABLE (FALSE)`
- `D3DRS_ALPHATESTENABLE (FALSE)`
- `D3DRS_CLIPPLANEENABLE (0)`
- `D3DRS_DITHERENABLE (FALSE)`
- `D3DRS_ENABLEADAPTIVETESSELLATION (FALSE)`
- `D3DRS_FILLMODE (D3DFILL_SOLID)`
- `D3DRS_FOGENABLE (FALSE)`
- `D3DRS_LASTPIXEL (TRUE)`
- `D3DRS_MULTISAMPLEMASK (0xFFFFFFFF)`

- `D3DRS_SEPARATEALPHABLENDENABLE (FALSE)`
- `D3DRS_SHADEMODE (D3DSHADE_GOURAUD)`
- `D3DRS_SRGBWRITEENABLE (FALSE)`
- `D3DRS_STENCILENABLE (FALSE)`
- `D3DRS_WRAP0 ... D3DRS_WRAP15 (0)`

Expected default values initialized sampler states (*SetSamplerState*):

- `D3DSAMP_SRGBTEXTURE (0)`

Modified render states (*SetRenderState*):

- `D3DRS_BLENDOP`
- `D3DRS_BLENDOPALPHA`
- `D3DRS_CLIPPING`
- `D3DRS_COLORWRITEENABLE`
- `D3DRS_CULLMODE`
- `D3DRS_DESTBLEND`
- `D3DRS_DESTBLENDALPHA`
- `D3DRS_LIGHTING`
- `D3DRS_MULTISAMPLEANTIALIAS`
- `D3DRS_SCISSORTESTENABLE`
- `D3DRS_SEPARATEALPHABLENDENABLE`
- `D3DRS_SRCBLEND`
- `D3DRS_SRCBLENDALPHA`
- `D3DRS_ZENABLE`

Modified sampler states (*SetSamplerState*):

- `D3DSAMP_ADDRESSU`
- `D3DSAMP_ADDRESSV`
- `D3DSAMP_MAGFILTER`
- `D3DSAMP_MAXMIPLEVEL`
- `D3DSAMP_MINFILTER`
- `D3DSAMP_MIPFILTER`
- `D3DSAMP_MIPMAPLODBIAS`

Modified bind states:

- Render target (*SetRenderTarget*)
- Depth surface (*SetDepthStencilSurface*)
- Textures (*SetTexture*)
- Vertex shader (*SetVertexShader*)
- Fragment shader (*SetPixelShader*)
- Scissor rect (*SetScissorRect*)
- Vertex declaration (*SetVertexDeclaration*)
- Stream sources (*SetStreamSource*)
- Indices sources (*SetIndices*)