



# **Cg Toolkit Release Notes**

*Release 3.1.0013*

**NVIDIA Corporation**

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## 1.1 NAME

cg\_3\_1\_0013 - Cg Toolkit 3.1 April 2012

## 1.2 SUMMARY

The Cg Toolkit allows developers to write and run Cg programs using a wide variety of hardware and OS platforms and graphics APIs. Originally released in December 2002, the Toolkit now supports over 30 different DirectX and OpenGL profile targets. It provides a compiler for the Cg language, runtime libraries to use with the OpenGL and DirectX graphics APIs, support for CgFX effect files, example applications, and extensive documentation.

## 1.3 CONTENTS

### 1.3.1 Cg Runtime libraries

The Cg core runtime library for managing parameters and loading programs.

The CgGL runtime library for OpenGL based applications.

The CgD3D9 runtime library for DirectX 9 based applications.

The CgD3D10 runtime library for DirectX 10 based applications.

The CgD3D11 runtime library for DirectX 11 based applications.

### 1.3.2 Supported Profiles

OpenGL

*gp5tcp* NV\_tessellation\_program5 control program.

*gp5tep* NV\_tessellation\_program5 evaluation program.

*gp5gp* NV\_geomentry\_program5.

*gp5vp* NV\_vertex\_program5.

*gp5fp* NV\_fragment\_program5.

*gp4gp* NV\_geomentry\_program4.

*gp4vp* NV\_vertex\_program4.

*gp4fp* NV\_fragment\_program4.

*gslg* OpenGL Shading Language (GLSL) for OpenGL 2.0 geometry shader.

*gslv* OpenGL Shading Language (GLSL) for OpenGL 2.0 vertex shader.

*gslf* OpenGL Shading Language (GLSL) for OpenGL 2.0 fragment shader.

*arbvp1* ARB\_vertex\_program 1.0.

*arbfpl* ARB\_fragment\_program 1.0.

*vp40* ARB\_vertex\_program + NV\_vertex\_program2 option.

*fp40* ARB\_fragment\_program + NV\_fragment\_program2 option.

*vp30* NV\_vertex\_program 2.0.  
*fp30* NV\_fragment\_program 1.0.  
*vp20* NV\_vertex\_program 1.0.  
*fp20* NV\_register\_combiners and NV\_texture\_shader.

#### DirectX 11.0

*ds\_5\_0* HLSL11 Domain Shader.  
*hs\_5\_0* HLSL11 Hull Shader.  
*gs\_5\_0* HLSL11 Geometry Shader.  
*vs\_5\_0* HLSL11 Vertex Shader.  
*ps\_5\_0* HLSL11 Fragment Shader.

#### DirectX 10.0

*gs\_4\_0* HLSL10 Geometry Shader.  
*vs\_4\_0* HLSL10 Vertex Shader.  
*ps\_4\_0* HLSL10 Fragment Shader.

#### DirectX 9.0c

*hlslv* HLSL9 Vertex Shader.  
*hlslf* HLSL9 Fragment Shader.  
*vs\_3\_0* Vertex Shader 3.0.  
*ps\_3\_0* Pixel Shader 3.0.

#### DirectX 9

*vs\_2\_x* Extended Vertex Shader 2.0.  
*ps\_2\_x* Extended Pixel Shader 2.0.  
*vs\_2\_0* Vertex Shader 2.0.  
*ps\_2\_0* Pixel Shader 2.0.  
*vs\_1\_1* Vertex Shader 1.1.  
*ps\_1\_3* Pixel Shader 1.3.  
*ps\_1\_2* Pixel Shader 1.2.  
*ps\_1\_1* Pixel Shader 1.1.

## 1.4 IMPROVEMENTS AND BUG FIXES

### 1.4.1 Bug Fixes

Improved GLSL support for clip semantics.

Fixed a runtime bug concerning gp4 and gp5 geometry programs.

## 1.5 DOWNLOAD

Windows x86/x86-64 [installer](#) for Windows XP, Vista and Win7.

Mac OS X ppc/i386/x86\_64 [dmg](#) for Leopard, Snow Leopard and Lion.

Linux x86 [tgz tarball](#), [rpm](#) for RedHat and [deb](#) for Debian and Ubuntu.

Linux x86-64 [tgz tarball](#), [rpm](#) for RedHat and [deb](#) for Debian and Ubuntu.

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## 1.7 SEE ALSO

*2.1.0009, 2.1.0012, 2.1.0016, 2.1.0017*

*2.2.0004, 2.2.0006, 2.2.0010, 2.2.0017*

*3.0.0007, 3.0.0015, 3.0.0016*

*3.1.0010, 3.1.0013*