NVIDIA
NVIDIA FX Composer 2.5 &
NVIDIA Shader Debugger
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NVIDIA FX Composer 2.5
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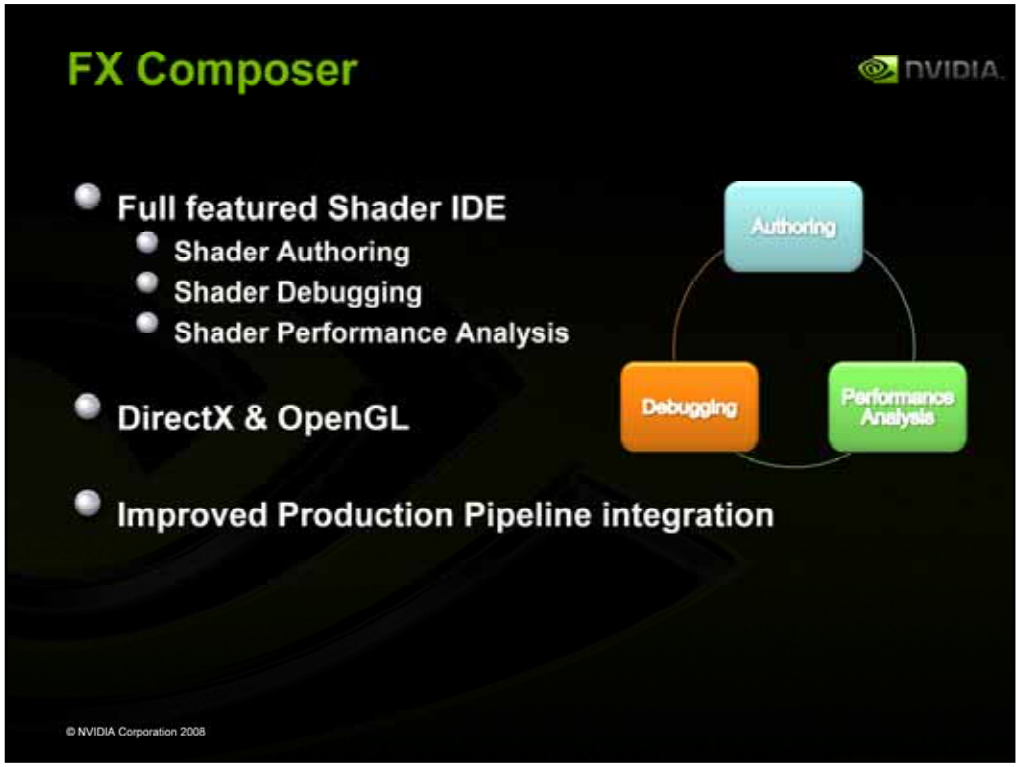
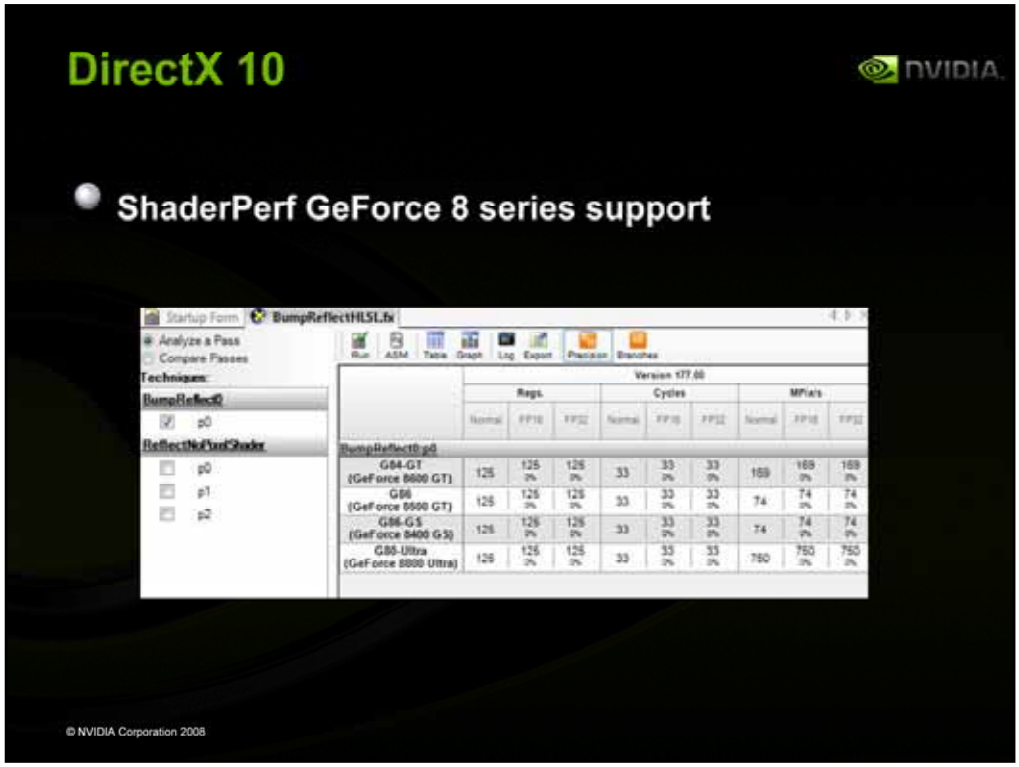


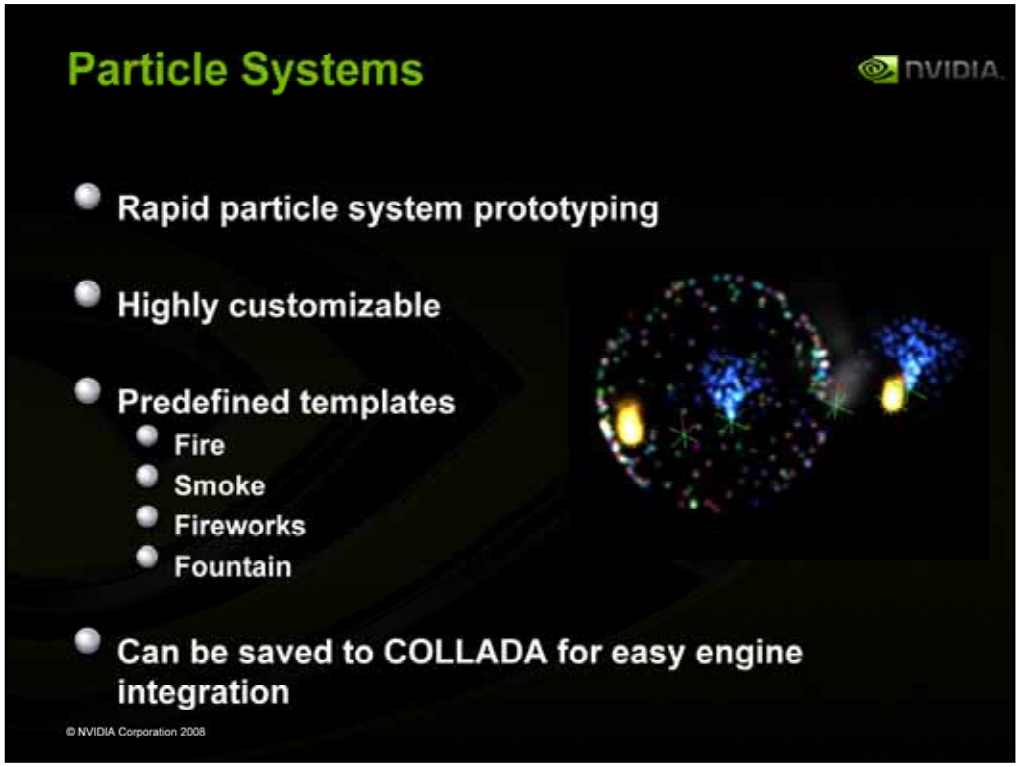

FX Composer 2.5 is designed to be a full fledge Shader Integrated Development Environment. It provide easy authoring, performance analysis and debugging for all your shaders

FX Composer 2.5 add authoring supports for all the major DirectX 10 features such as:

- Geometry Shaders
- Texture Arrays including the possibility to browse texture slices the texture panel
- Stream Out with additional annotations to enable Buffer objects to be streamed
- Off course FX Composer 2.5 also supports the new texture formats that comes with this new iteration of the Microsoft API

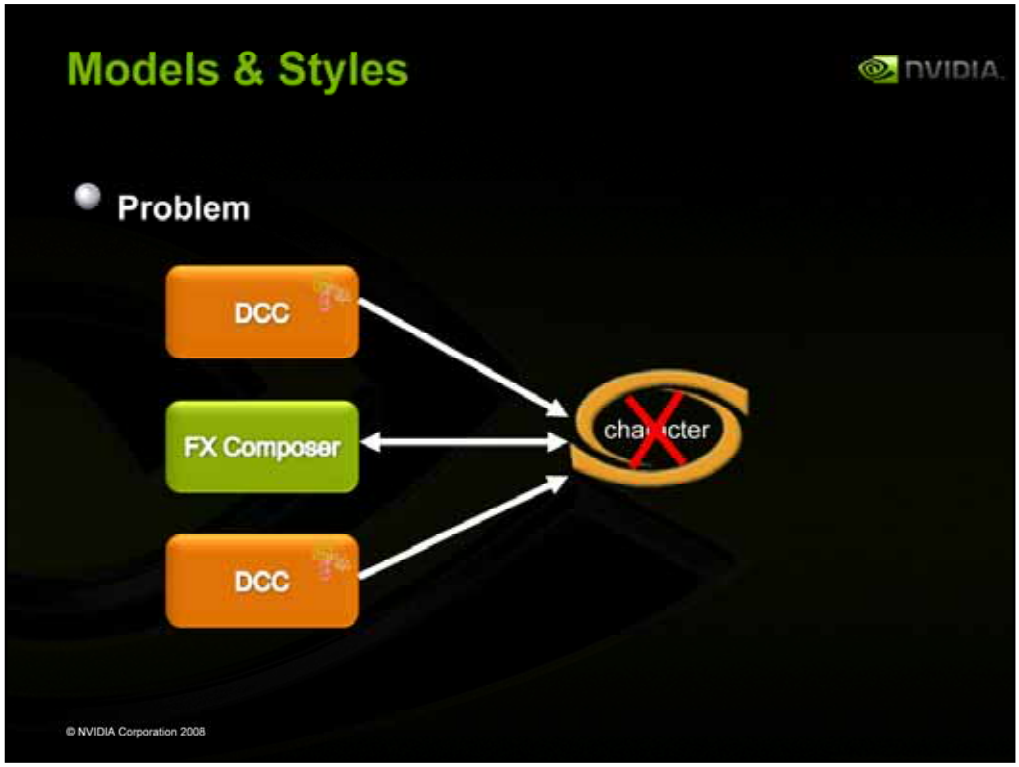



Along with the support of DirectX10, we updated ShaderPerf our plugin to support GeForce 8 series performance analysis.




FX Composer can be used to rapidly prototype and customize particle systems.

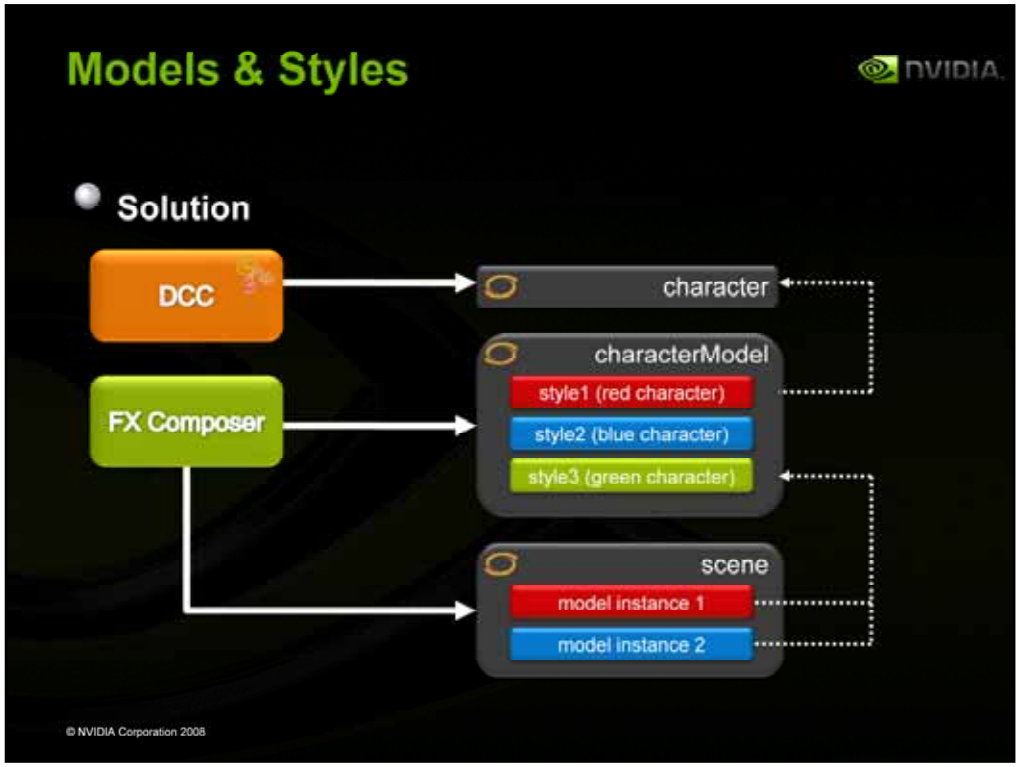
To help you start with it we added a few predefined templates for the most common particle systems.




This schema shows the current workflow and the problem associated with it.

Modeler exports content to a COLLADA file. FXC Opens this DAE file, makes material assignments, tweaks shaders, and bind lights… saves changes in the same file.

-> File is altered, and Modeler cannot edit geometry anymore without breaking all the changes done in FX Composer 2.




New Proposed model in FXC

Modeler exports data in a file only he can alter. FX Composer can create a model out of the scene contained in the file.

This file is only referenced by FX Composer.

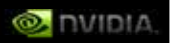
Within FX Composer, the artist will create Visual Styles to the model, redefining groups of materials to apply on a model. (A character with blue clothing, another with red clothing, different localizations… etc…)

A visual style can redefine all, or parts of a model's material.

Once the styles are created, a model can be instanced in a scene. This at the instance level that the style is applied by selecting the one of the available styles for that model.

The big advantage of this system is that the modeler can now modify the original character without breaking all the work done further down the pipeline.

# Models & Styles




- Models
  - Represents a character, environment or prop
  - Package scenes for reuse
  - Instanced in scenes
- Styles
  - Store material assignments information
  - Can have multiple styles per model

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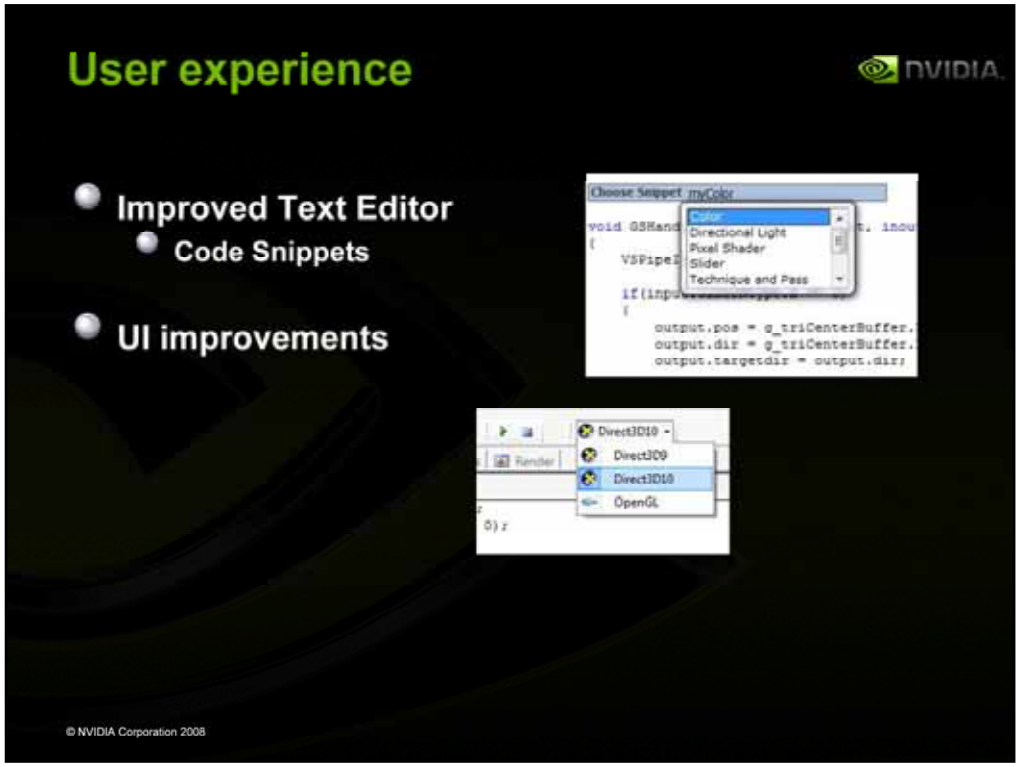
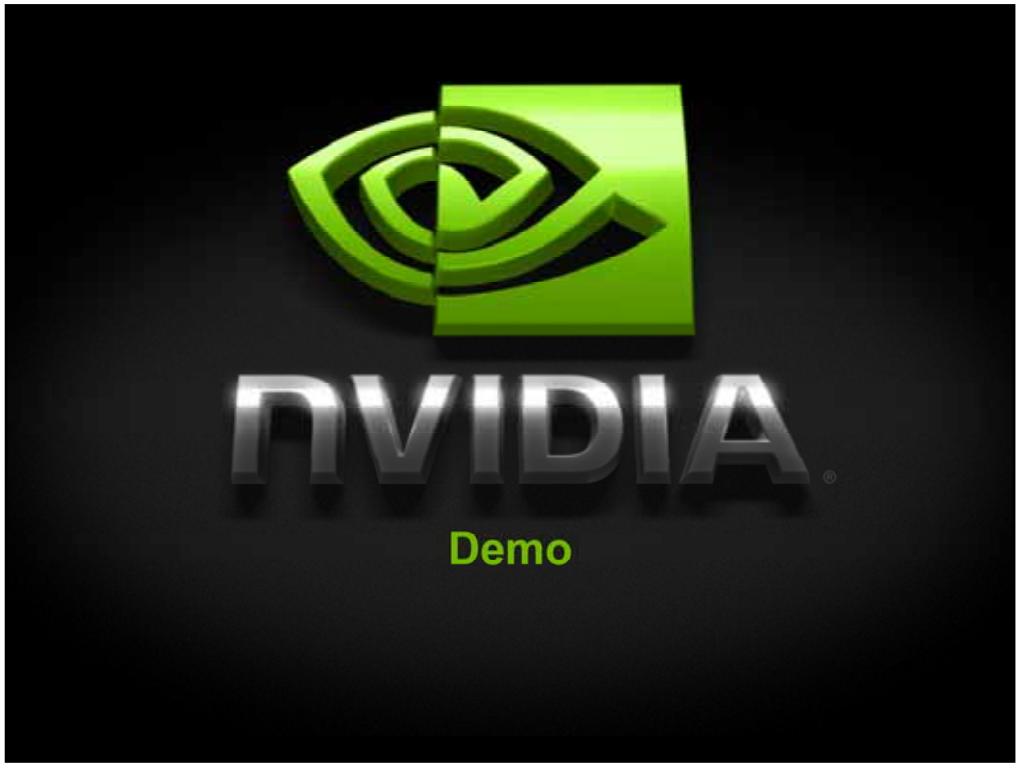
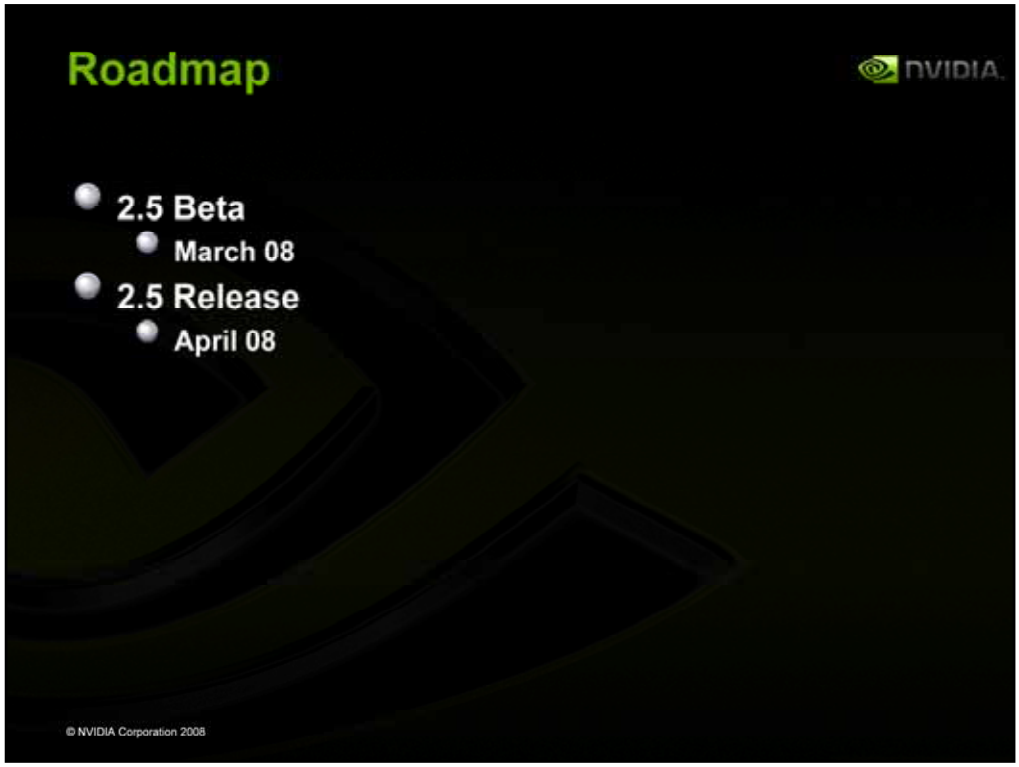



With all the features offered by FX Composer, it is easy for users to get overwhelmed. This is why we are concentrating a lot of effort towards UI improvement and simplification to really make shader authoring a pleasant task for graphic programmers as well as artists.

Another thing that people have been asking was an improved shader editor.

FX Composer 2.5 will be shipping with a Code Snippet system that allows the user to rapidly insert shader parameters, sampler declarations, technique and passes.


NVIDIA
Demo


Roadmap
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2.5 Beta
March 08
2.5 Release
April 08
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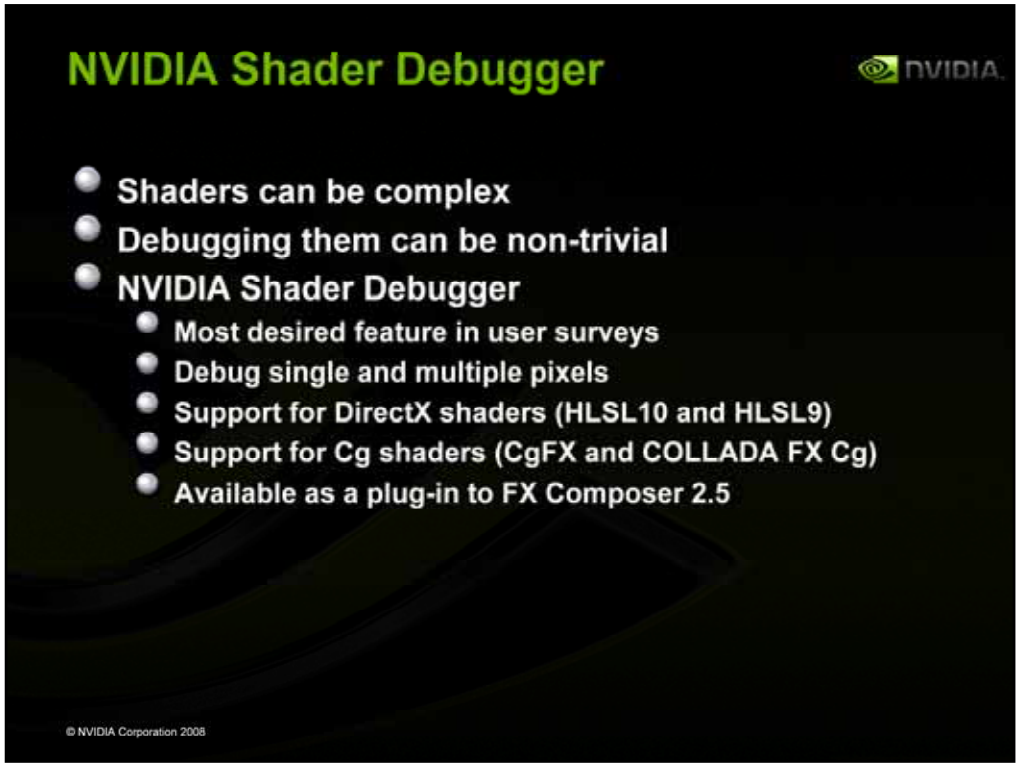
NVIDIA
Shader Debugger
Aravind Kalaiah


NVIDIA Shader Debugger
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Shaders can be complex
Debugging them can be non-trivial
NVIDIA Shader Debugger
Most desired feature in user surveys
Debug single and multiple pixels
Support for DirectX shaders (HLSL10 and HLSL9)
Support for Cg shaders (CgFX and COLLADA FX Cg)
Available as a plug-in to FX Composer 2.5
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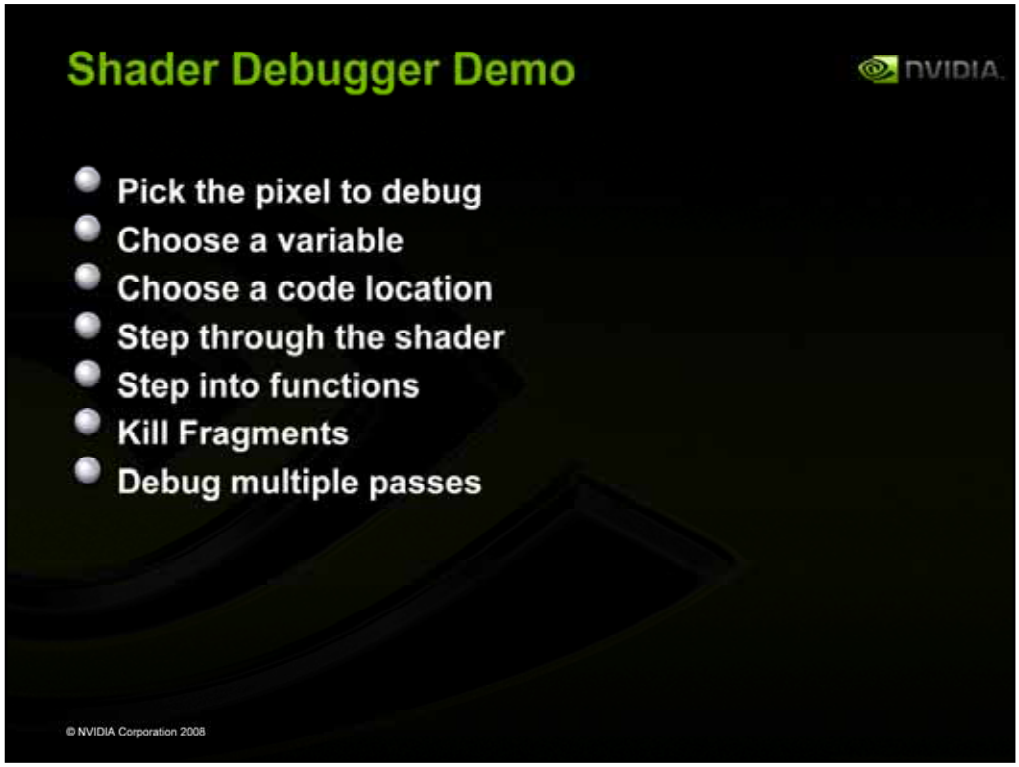
Shader Debugger Demo
NVIDIA
Pick the pixel to debug
Choose a variable
Choose a code location
Step through the shader
Step into functions
Kill Fragments
Debug multiple passes
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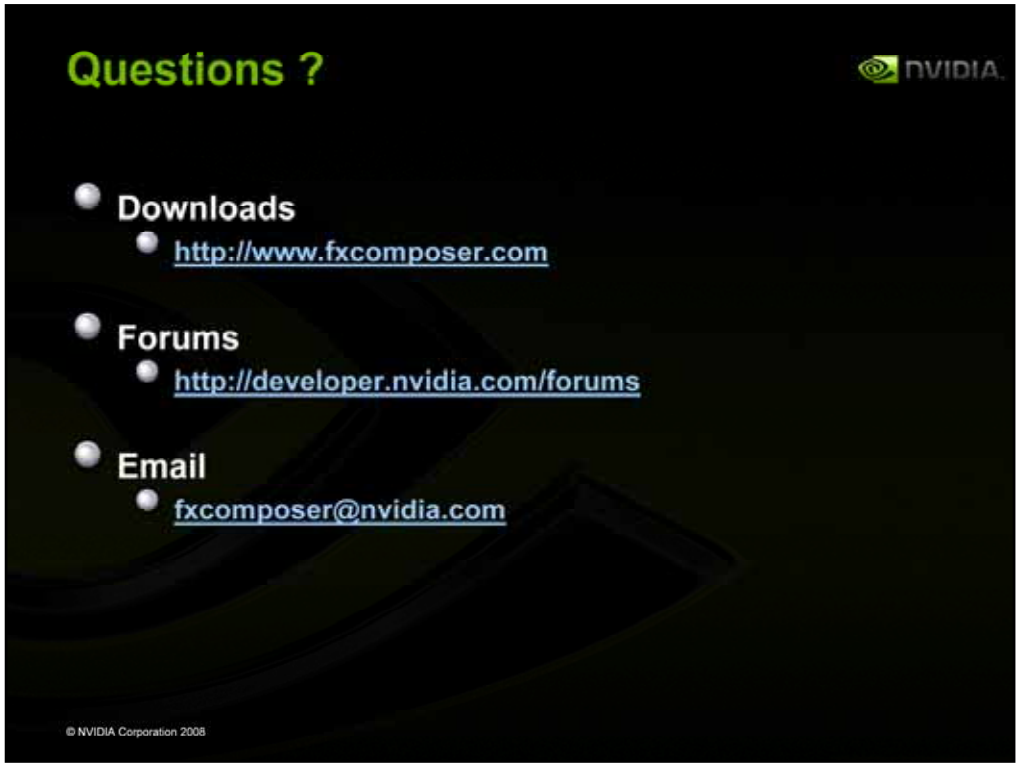
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