PowerVR GPU Specific Best Practices

The following rules are a set of performance recommendations that developers should seek to implement to help produce well-behaved, high performance graphics applications using the PowerVR device.

Do Profile Your Application

Identify the bottlenecks in your application and determine whether there are opportunities for improvement.

Do Not Use Alpha Blend Unnecessarily

Be sure Alpha Blending is used only when required to make the most of deferred architectures and to save bandwidth.

Alpha blending in CGI Studio...

> For 2D scenes when having the default settings the alpha blending will not be performed.

Perform Clear

Perform a clear on a framebuffer's contents to avoid fetching the previous frame's data on tilebased graphics architectures, which reduces memory bandwidth.

> For 3D scenes the clearing should be performed not only for the color buffer but also for the depth buffer and for the stencil buffer. This can be achieved in Scene Composer by ticking the corresponding checkboxes on the properties panel of the Camera.

There are situations when the clearing is not necessary:

- In complex solutions with multiple scenes and cameras it is recommended that only one camera performs the clear. For instance, in the case of several scenes overlapping and having cameras with partial viewports it is recommended to add an extra empty scene and a camera with the sole purpose to clear the complete viewport.
- In the situation when the drawing of an item from the scene clears the color buffer. For example if the solution contains several scenes and a background image that covers entirely the viewport the clearing is not necessary because the background image will be drawn first and will do implicitly the clear.

Revision #3
Created 2023-02-17 07:30:15 UTC by Tsuyoshi.Kato
Updated 2024-05-29 04:17:44 UTC by Tsuyoshi.Kato