

## Doomsday Engine - Feature #1995

### Improved 3D model shaders

2015-03-13 09:09 - skyjake

|  |                               |
|--|-------------------------------|
| <b>Status:</b> Closed  | <b>Start date:</b> 2013-10-12 |
| <b>Priority:</b> Normal  | <b>% Done:</b> 100%           |
| <b>Assignee:</b> skyjake   |                               |
| <b>Category:</b> Enhancement   |                               |
| <b>Target version:</b> 2.0 – Home UI & Packages  |                               |
| <b>Description</b>   |                               |
| The new 3D model shading need some improvements:   |                               |
| <ul style="list-style-type: none"><li>• <del>Allow specifying different shaders for models as needed.</del></li><li>• <del>Provide model vertex colors as a vertex attribute to the shader.</del></li><li>• Add texture mapping type for reflection cube maps.</li><li>• <del>Fog.</del></li></ul> |                               |
| <b>Related issues:</b>   |                               |
| Related to Feature #2105: Manually created reflection cube maps for models   | <b>Closed</b> 2015-07-29      |
| Related to Feature #1623: Shaders  | <b>Progressed</b> 2013-03-01  |
| Follows Feature #8: New GL2 based model renderer   | <b>Closed</b> 2013-10-11      |

#### Associated revisions

##### Revision 79570cab - 2015-12-06 22:55 - skyjake

Model Renderer|Shaders: Multiply vertex color into diffuse texture color

The general-purpose shaders in renderer.pack now multiply aColor into the color from the diffuse texture map.

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##### Revision 637ac102 - 2015-12-18 11:29 - skyjake

Renderer|Shaders: "model.skeletal.generic" supports uMapTime, custom UV macro

The generic shader can now be customized with predefined macros. The PREDEF\_TRANSFORM\_UV() macro is called before texel lookup.

uMapTime is available for use in the shader, although the default implementation does not use it for anything.

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##### Revision 14dce08c - 2015-12-26 21:40 - skyjake

Renderer|Shaders: Added a GLSL include file for reflection cube maps

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##### Revision 20d2343c - 2015-12-26 21:44 - skyjake

Model Renderer: Added a shared reflection cube map

For now all models will share the same reflection cube map.

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##### Revision ea8ee37d - 2015-12-28 21:14 - skyjake

Renderer|Shaders: Incorporate reflection map to shaders

All generic shaders now support reflection mapping.

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## Revision 1982d6bd - 2015-12-28 22:01 - skyjake

Model Renderer: Use /home/cubemap.jpg as the reflection cube map

For testing purposes, check for "cubemap.jpg" in the runtime folder and use it as the reflection cube map.

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## History

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### #1 - 2015-03-13 09:09 - skyjake

- Tags changed from 3DModel to 3DModel, OpenGL, Renderer
- Subject changed from 3D model shaders to Improved 3D model shaders

### #2 - 2015-03-13 09:10 - skyjake

- Follows Feature #8: New GL2 based model renderer added

### #3 - 2015-03-13 09:11 - skyjake

- Due date deleted (2013-10-12)

### #4 - 2015-04-22 04:24 - danij

- Target version deleted (42)

### #5 - 2015-07-29 14:28 - skyjake

- Target version set to 2.0 – Home UI & Packages

### #6 - 2015-07-29 14:32 - skyjake

- Related to Feature #2105: Manually created reflection cube maps for models added

### #7 - 2015-08-27 15:55 - skyjake

- Description updated

### #8 - 2015-11-03 09:16 - skyjake

- Status changed from New to In Progress
- % Done changed from 0 to 20

There can now be a different shader for each rendering pass of a model.

### #9 - 2015-11-10 11:33 - skyjake

- % Done changed from 20 to 40

Fog is now implemented for 3D models (in `renderer.pack/include/fog.gls`).

### #10 - 2015-11-24 19:31 - skyjake

- Related to Feature #1623: Shaders added

### #11 - 2015-12-06 22:55 - skyjake

- % Done changed from 40 to 60

Model vertex colors are now read from the model file and provided as an attribute named `aColor`.

### #12 - 2015-12-06 22:56 - skyjake

- Description updated

### #13 - 2015-12-26 22:52 - skyjake

- % Done changed from 60 to 80

The shader functions for reflection cube maps have now been implemented. The next step is integrating the reflection as part of "model.skeletal.generic".

**#14 - 2015-12-29 10:15 - skyjake**

- *Status changed from In Progress to Resolved*

- *% Done changed from 80 to 100*

**#15 - 2015-12-29 10:15 - skyjake**

- *Description updated*

**#16 - 2015-12-29 10:16 - skyjake**

- *Status changed from Resolved to Closed*