

The 3D Web

Introduction to Papervision3D 2

Flash 3D Engines

- Sandy3D (www.flashesandy.org)
- Away3D (www.away3d.com/)
- Five3D (five3d.mathieu-badimon.com)
- Freespin (<http://www.freespin3d.com>)
- Alternativa3D (alternativaplatform.com/en/alternativa3d/)
- Flash 10/CS4 3D
- We3D (<http://osflash.org/we3d>)
- Electric3D (www.electricoyster.com/)
- **Papervision3D** (blog.papervision3d.org)

Alternative Non Flash Engines

- Shockwave3D
- Acrobat 3D
- 3DMLW (www.3dmlw.com/)



DEMO: 3DMLW (www.3dmlw.com/)

3DMLW

```
<?xml version="1.0"?>
<document stylesheet="{#default}" color="#ECF8E0">
  <stylesheet id="default">
    <default>
      <lights>
        <light x="25" y="15" />
      </lights>
    </default>
    <class name="ground">
      <textures>
        <texture source="muru.jpg" />
      </textures>
      <physics collidable="true" mass="0" />
    </class>
    <class name="box">
      <physics collidable="true" mass="0" kinetic="true" />
    </class>
    <class name="apple" color="#43639f88">
      <physics id="trigger" collidable="true" mass="0.01" freeze="true">
        <gravity y="-35.919666" />
      </physics>
    </class>
  </stylesheet>
  <content3d camera="{#cam1}">
    <camera id="cam1" x="17" y="14" z="80" />
    <object id="box" x="-6.55543" y="-30.057507" z="7.586335" source="box.3ds" ... ..
```

What is Papervision3D?

“Open Source realtime 3D engine for Flash.”

Prerequisites

- ActionScript 3.0
- Flash CS3 / CS4 / Adobe Flex 2 or 3
- OOP (Object Orientated Programming)

Evolution of Papervision3D

- Started by Carlos Ulloa, 2005
- Papervision3D 1.0 released in 2006
- In 2007 John Grden converted classes to AS3
- In 2008 Papervision3D 2 Great White was released
- Today Papervision3D has 280 classes and 2,500 people signed up to the mailing list.
- OFFICIAL BLOG: <http://blog.papervision3d.org/>

The Papervision3D Developers The core team

- **Carlos Ulloa:** Founder and leader of Papervision3D
- **John Grden:** Component/release manager
- **Ralph Hauwert:** Engine core/shaders
- **Tim Knip:** Engine core/DAE/shaders
- **Andy Zupko:** Effects

The Papervision3D Developers The committer team

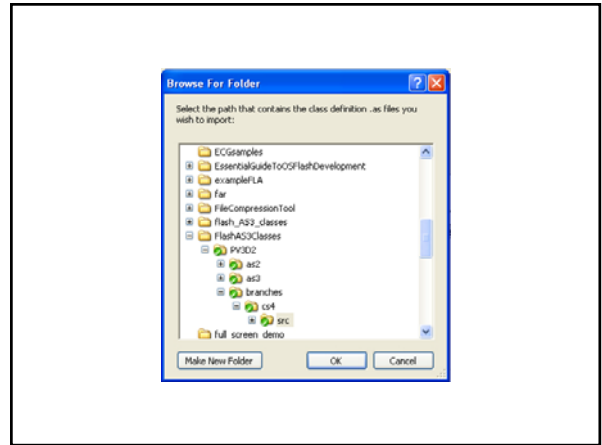
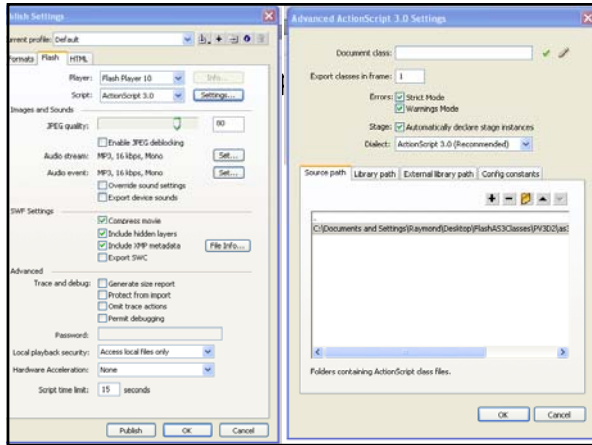
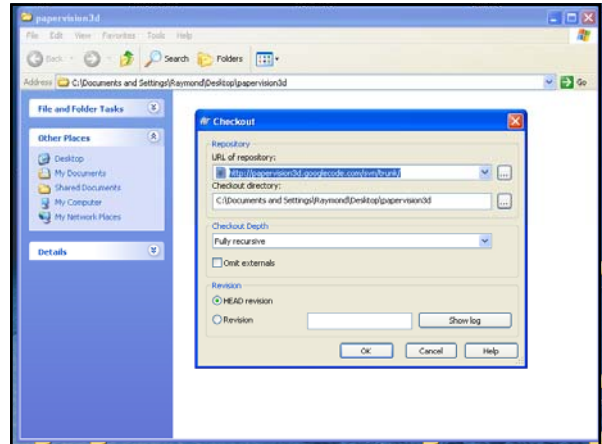
- **Ricardo Cabello:** Testing/demos/feature review
- **De'Angelo Richardson:** Testing/extra features
- **Stephen Downs:** Flex 2.0 components/effects
- **Seb Lee Delisle:** Particles/effects
- **John Lindquist:** Tutorials/documentation

How to get these classes

- <http://code.google.com/p/papervision3d/>
- Download classes **OR** link to SVN repository

SVN (Subversion)

- PC Users: **Tortoise SVN**
<http://tortoisesvn.net/downloads/>
- MAC Users: **SVNX**
www.lachoseinteractive.net/en/community/subversion/svnx/features/

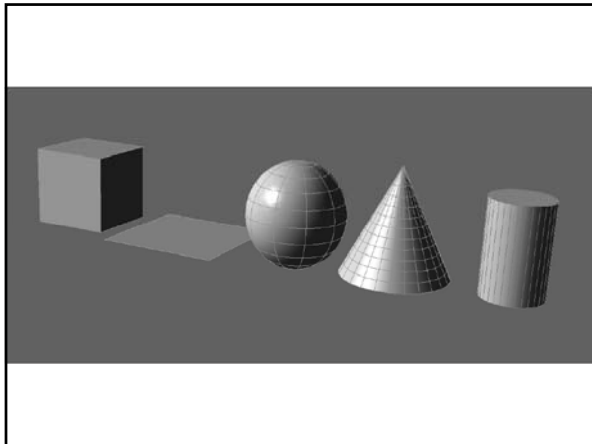


Essentials

- **Scene:** the what
- **Viewport:** the where
- **Camera:** from what point of view
- **Renderer:** the how

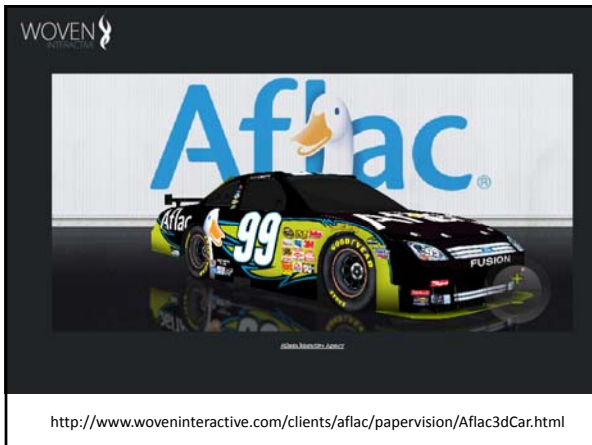
Primitives

- Cube
- Plane
- Sphere
- Cone
- Cylinder



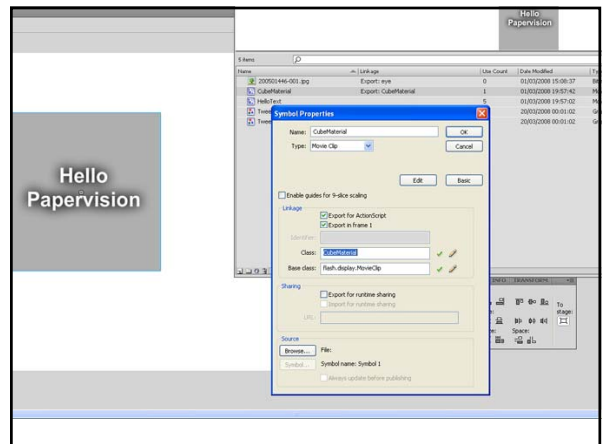
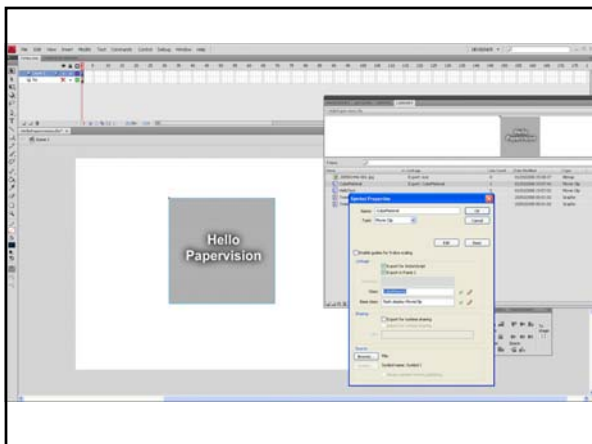
COLLADA

- Developed by Sony & maintained by the Khronos group
- Format chosen for papervision3D
- 3D Studio Max, Maya, Softimage's XSI, Modo, Blender
- .DAE



Materials

- Color materials
- Bitmap materials
- Movie materials
- Shaded materials
- Interactivity



```
import flash.display.MovieClip;
import flash.display.Sprite;
import flash.events.Event;
import org.papervision3d.cameras.FreeCamera3D;
import org.papervision3d.core.components.as3.utils.ObjectController;
import org.papervision3d.materials.MovieAssetMaterial;
import org.papervision3d.materials.utils.MaterialsList;
import org.papervision3d.objects.primitives.Cube;
import org.papervision3d.render.BasicRenderEngine;
import org.papervision3d.scenes.Scene3D;
import org.papervision3d.view.Viewport3D;
```

```
var camera:FreeCamera3D;
var scene:Scene3D;
var renderer:BasicRenderEngine;
var viewport:Viewport3D;
```

```
camera = new FreeCamera3D(11, 100);
scene = new Scene3D();
renderer = new BasicRenderEngine();
viewport = new Viewport3D(0, 0, true, false);
addChild(viewport);
```

NOTE: Camera is positioned at (0,0,-1000)

```
var material:MovieAssetMaterial
= new MovieAssetMaterial("CubeMaterial", true, true);

material.precise = true;
material.smooth = true;
material.tiled = true;

material.doubleSided = true;
```

```
var materialList:MaterialsList = new MaterialsList();
materialList.addMaterial(material, "all");

var cube:Cube = new Cube(materialList, 300, 300, 300);
scene.addChild(cube);
```

```
ObjectController.getInstance().registerStage(this.stage);
ObjectController.getInstance().registerControlObject(cube);
```


Physics

- <http://seraf.mediabox.fr/wow-engine/as3-3d-physics-engine-wow-engine/>
- <http://code.google.com/p/jiglibflash/>

