

# Guerilla Station / Guerilla Render

## Press Kit

[www.guerillarender.com](http://www.guerillarender.com)

Guerilla, composed of Guerilla Station and Guerilla Render, is a look development, assembly, lighting and rendering solution, dedicated to CG animation and visual effects.

Developed in Production for Productions and successfully used from TV Series to CG and VFX feature films, Guerilla Station/ Guerilla Render's references include the feature films *Leap!/Ballerina*<sup>1</sup>, *The Little Prince*<sup>2</sup>, *Mune*<sup>3</sup>, *Total Recall*, *Dredd*, *Mirror Mirror* and *Byzantium*<sup>4</sup>, the *Prodigies*<sup>5</sup> or the TV series *Grizzy and the Lemmings*<sup>6</sup>, *Playmobil Super 4*<sup>7</sup>.

You may download official images and videos to use in your publications from the following documents:

- [Graphics from references feature films and TV series](#)
- [Corporate Graphics from Mercenaries Engineering](#)

You may also request on demand images from The Little Prince Feature Film by choosing in the following document: [TLP stills June 2015](#)

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Social networks:

- Forum: <http://guerillarender.com/forum>
- LinkedIn: [Mercenaries-Engineering](#)
- LinkedIn: [Guerilla-Render](#)
- Twitter: [@GuerillaRender](#)
- Youtube: [GuerillaRender](#)
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<sup>1</sup> ©2016 MITICO - GAUMONT – M6 FILMS – PCF BALLERINA LE FILM INC.

<sup>2</sup> ©2015 – LPPTV – LITTLE PRINCESS – ON ENTERTAINMENT – ORANGE STUDIO – M6 FILMS – LUCKY RED

<sup>3</sup> Orange Studio – Kinology – Onyx Films

<sup>4</sup> Prime Focus World

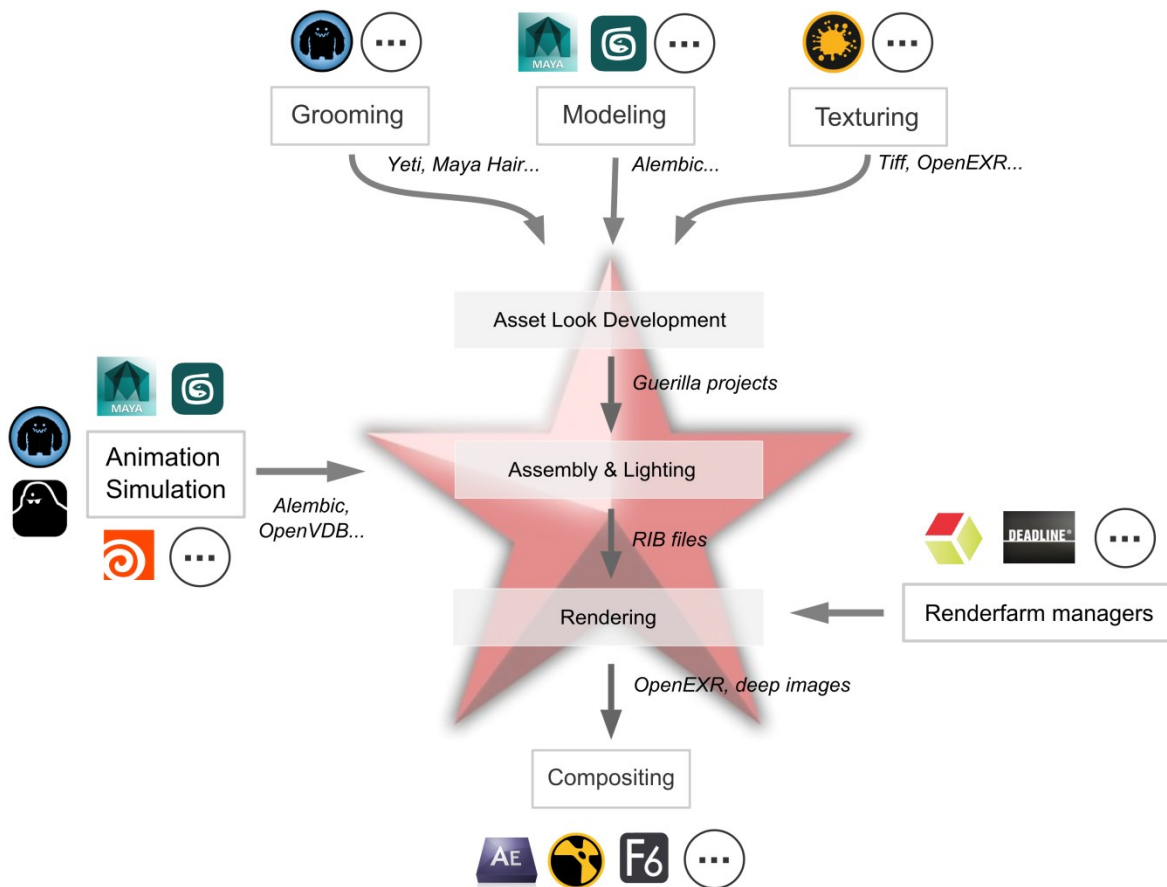
<sup>5</sup> Onyx Films

<sup>6</sup> Studio Hari

<sup>7</sup> Method Animation - morgen studio

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## Pipeline integration



Guerilla combines an innovative GUI application and a powerful brute-force bidirectional path-tracing engine:

- in the Asset Look Development step: the GUI application uses modeling, texture, hair/fur grooming to produce the final assets look
- in the Assembly & Lighting step: the GUI application assembles animations, effects and asset look-development to light the shots
- in the Rendering step: connected to the render farm manager, the rendering engine produces the final images

Guerilla reduces the technical complexity without sacrificing the quality, thus decreasing the production costs related to personnel.

In addition, Guerilla is specifically developed to support heavy animation and VFX production datasets, where thousands of assets are commonly assembled into thousands of shots. This avoids the cost of splitting heavy scenes, and enables easily replicating a scene setup to another.

Furthermore, Guerilla ensures interoperability at all points of the pipeline by using industry standards, and simplifies its integration into a production pipeline, preexistent or new.

## Detailed Features

Guerilla Station / Guerilla Render is a look development, lighting and rendering solution designed specifically for the Animation and VFX industries.

### Powerful lighting tool

#### Lighting environment

*Guerilla Station GUI is optimized for the look development and the lighting tasks. The renderer is perfectly embedded in the GUI. Load plates over or behind your render, push and compare images.*

*All the memory is available for rendering. The pre-computations are cached in memory for faster re-rendering.*

*Guerilla provides a professional color pipeline. The different input/screen/output color spaces are carefully handled and can be all controlled by the user.*

#### RenderGraph

*Work in a non-linear fashion using the RenderGraph. Always track the work you have done and replicate it easily.*

*Organize the different attributes of related objects in the same space of the document.*

*Quickly debug a shot. Find which node is producing a specific behavior.*

*Easily copy and paste all the work done on an asset or a shot into a new project in two clicks.*

#### Gather and render

*Using Alembic files, gather the animations and simulations you have done in any 3d package compatible with Alembic. Render everything together and simplify your pipeline.*

### Easy and productive rendering

#### Brute-force bidirectional path tracing

*Guerilla Render uses an unbiased bidirectional path tracer to render the scene. You can validate shots with fast preview renders and be sure the final renders will be the same, with less noise.*

*Thanks to the progressive rendering, Guerilla gives a fast and consistent preview of your work. Re-rendering is even faster than the first render.*

*Once you are happy with the progressive result, you can render your project in final quality. The image will then converge to the exact same result than the progressive render. For an equal number of samples, the final render will even be faster and less noisy.*

#### Physically Plausible Über Shaders

*Guerilla Render comes with physically plausible shaders for surfaces and curves. Using the same Surface shader, you can blend the different layers to get a plastic, glass, metal, car paint or skin look, using understandable attributes.*

*You can use texture masks to blend the BRDF layers inside a single object. No need to split your model by materials any more. Simply paint the metal or the glass part of your object in a mask to drive those BRDF layers.*

*The subsurface scattering is rendered like any other BRDF, available on every surface, with no effort.*

*Guerilla Render provides lots of sub-shaders, like textures, bump, noise... Those sub-shaders can be assigned to any shader inputs using the RenderGraph.*

### Lights and Environment Shaders

*Guerilla Render is shipped with a large choice of lights and environments for all kind of situations. Lights can have various shape and can contain multiple clipping volumes like cones, cylinder, frustum...*

*You can easily create a light rig, save it and share it with other people.*

*The lights can be animated, rigged, constraint to any object present in the SceneGraph.*

*The lights can be assigned to specific AOVs. You can render for example a Specular AOV lit only by the fill lights.*

*All Guerilla Render lights and environments are built using shading networks. They can be easily customized to your production needs.*

## **Flexibility**

### Fine control

*Guerilla Render gives you a professional level of control of your render. Light/shadow/trace linking has never been so simple and powerful. The image sampling can be controlled at every step.*

*Light/Trace Linking. You can control the visible light and object sets into each BRDF of a shader, like “I don't want to see this object in the reflection of that object”.*

*Light Override. You can override the light attributes only for a subset of objects, like “I want this light to be blue for this specific object”.*

*Sampling. You can control the sampling (i.e. the amount of samples used) by pixels, at every shader, at every BRDF, at every light and every environment.*

### Outputs

*With Guerilla Render, you have a total control on your render files, render passes, render layers and AOVs. All of which are rendered at the same time.*

*Guerilla Render can render different layers (like Foreground, Background) with matte objects. Those layers can be composed of AOVs (Arbitrary Output Values like Diffuse, Specular, etc...); each AOV can be lit by a light category (like KeyLights, FillLights); all that at the same time. Stereo images can also be rendered at the same time. Part of those images can share the same OpenEXR files.*

*AOVs can have their own shading network to render a specific shading expression (like Occlusion, Id, Depth, Normal etc.) on the whole scene.*

*It is easy to customize the available shader AOVs.*

### SDK

*Using Guerilla Render's SDKs (Python, C++, LUA), you can customize even more Guerilla Render and make it fit your pipeline easily.*

*Guerilla Render is scriptable in Python. You can also use the Lua SDK to customize Guerilla Render GUI, create commands, make productivity tools and bind Guerilla Render to your Renderfarm manager.*

*With the C++ SDK you can write geometry file importers or geometry procedurals like our OBJ and Alembic plug-ins, or our HairAndFur procedural.*

### Scripted/network shaders

*Everything in Guerilla Render is open and customizable. Components like materials, lights, sub-shaders, environments, render pass AOVs, are written using Renderman® Shading Language shaders or shading networks. You can customize any single component with basic TD skills.*

*Once you have created a new component, you can directly use it, or you can export it in the library to share it with your team. Materials, displacement shaders or sub-shaders can then be directly referenced and applied to any objects using a simple RenderGraph node. No need to import them in the project.*

*Thanks to Mercenaries Engineering's unique embedded SIMD shader compiler, those scripts and networks are optimized and compiled on the fly using the parameters you choosed, producing the fastest possible code, even faster than a C++ hardcoded shader.*

## **Performances**

### Speed

*Guerilla Render is designed around an unique raytracing technology which fully takes advantage of the CPU computing resources and lowers the memory bandwidth to deliver the best possible performances.*

*Guerilla Render performances scale transparently with the number of cores of your CPU.*

*Thanks to its unique design, Guerilla Render is very efficient at raytracing hairs and sub-surface scattering. Furthermore Guerilla Render implements super-fast opacity for transparent leaves, hairs, particles, ...*

*Guerilla Render uses original sampling strategies to converge at the fastest possible speed.*

*Guerilla Render compiles all its shaders on the fly using an embedded SIMD compiler.*

### Memory

*Guerilla Render deals everyday with huge production datasets. It supports massive texture loads, instances, can render hundreds of output images at the same time and raytrace billions of unique polygons or curves.*

*Guerilla Render features an optional geometry compression to save even more memory.*

### Motion blur

*3d motion blur is a first class citizen in Guerilla Render. It is fast, accurate and always available.*

*Guerilla Render can always render motion blur, even if the geometry is using a single motion step. You can control the shutter opening and closing time to specify which part of the movement you want to render, to match a live footage for example. The shutter can also have different shapes (like triangle, leading, trailing, gaussian...)*

### Displacement

*The displacement in Guerilla Render is precise, fast and programmable*

## Industry standards

### Autodesk Maya®

*Guerilla Render is shipped with a professional Maya® exporter, able to bake every kind of geometry and animations.*

*Meshes, subdivision meshes, maya hair, singles splines, fluids, particles, cameras, dynamic attributes... Almost everything can be baked and exported.*

*You have a full control on the baking process on a transform basis: Automatic (do the best regarding the deformers applied) Not exported Static (bake the object at the first frame) Deformed (bake the vertices and the normals) Fully deformed (bake everything) Motion blur steps per object Smoothing attributes*

### Alembic

*Simply drag and drop an .abc file in Guerilla Render and start to render. Using Alembic is also a great way to assemble work done in different softwares and render everything in Guerilla Render.*

*Guerilla Render supports all kind of Alembic geometry, camera and animation, custom attributes...*

*Alembic files are referenced by the Guerilla project and by the final RIB files rendered on the render farm. The Alembic files you put in Guerilla are the final bake geometry, no more large files will be produced in the pipeline.*

### OpenEXR

*Guerilla Render reads OpenEXR HDR images and writes OpenEXR files with a single or multiple images in each file.*

### UDim textures

*Guerilla texture nodes are fully compatible with the UDim texture pipeline. You can provide GBs of tiled textures files and let Guerilla Render render everything.*

### Renderman® shading language

*Use in any shading network SLBox nodes, which uses a subset of the RSL to express shading expressions. No need to learn a new shading language.*

### FX

*Render any point cache file formats, (abc, bgeo, bin..) with any shape (points, streaks, blobbies, spheres, sprites..).*

### RIB (ASCII, binary and compressed RIB)

*Guerilla Render internally uses RIB files to send the jobs on the render farm. Render Wranglers can inspect those files and modify them. You may also render custom RIB files in Guerilla.*

*Furthermore, custom RIB files can be rendered using the RIBBox or a RunProgram procedural. The RIBBox will simply reads a RIB file, the RunProgram procedural executes a user process (like a python script) and renders the standard output as RIB commands.*

### Geometry DSO

*Guerilla Render directly uses some binary DSO built for Renderman® compliant renderers, for example the Massive®, Golaem® and Yeti® technologies<sup>8</sup>.*

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<sup>8</sup> This feature is available for some specific platforms and DSO revisions

## **Battery included**

### Library

*Guerilla Render comes with a library of hundreds of nodes. Materials, lights, environments, sub-shaders, shading nodes, procedurals, render passes...*

*The materials include a surface shader, a curve shader, a displacement shader and some utility shaders.*

*Many lights are included, like square lights, sphere lights, lights with cone, frustum or tube attenuation.*

*The library includes three type of environment, HDR Image, gradient or physical sky.*

*The sub-shaders include textures, bevel normal, bump normal, normal maps, noises, voronoi patterns...*

*Create your own nodes, extend the library and share it on the production floor.*

### Hair Procedural

*Using the same procedural, Guerilla Render can interpolate and multiply curves on a surface. Import a thousand of simulated/groomed hair guides in Guerilla Render and multiply them to millions at rendertime.*

*The duplication can be controlled using textures or shader expressions.*

### More procedurals

*Fill nurbs tubes with hairs, instanciate objects on surfaces or on particle points.*

### Volumetrics

*Volumetrics of all kind can be raytraced with the easy to use Volume shader, including Maya Fluid, OpenVDB, FumeFX, objects filled with volume, infinite volumes. Also comprise a black body model*

### Image Picker

*Identify, select, inspect, drag'n drop geometry directly in the Render View.*

### Lens shader

*Programmable camera lens shaders (lens distortion, fisheye, latlong projection).*

### Renderfarm Pipeline

*Guerilla Render directly communicates with your renderfarm manager. It generates the jobs and submits them on the farm, with a single click.*

*A render job can be distributed between multiple computers.*

*Using Coalition, Mercenaries Engineering's manager, you can setup a renderfarm in few hours.*

### HTTP monitor

*Finally, you can monitor your Render nodes in a web browser, access the renderer statistics and watch the rendering live.*

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