BakeMaster 2.0.0 Documentation

Release 2.0.0

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CONTENTS

BakeMaster Blender Baking Addon Documentation will help you learn all the ropes of your ultimate baking workflow with BakeMaster.

ABOUT

- *About BakeMaster*

1.1 About BakeMaster

1.1.1 Introduction

Welcome to BakeMaster, a powerful and feature-packed baking solution created for Blender - an open-source 3D Computer graphics software.

Along with the BakeMaster's intuitive and convenient workflow baking process becomes a pleasure. The addon is for users who can't stand wasting time and yearn for most functionality with professional and cutting-edge baking features.

With it, baking feels like a new book. Everything is right in your hands, under control, and easy to access and configure. Created by artists, BakeMaster is straightforward and comfortable to use, yet lands with numerous tweaks and toggles to fully meet your ultimate texture baking preferences.

Baking with BakeMaster takes only three steps:

- Setup Objects

- Choose Maps

- Hit Bake!

An unlimited number of objects and maps to bake, each driven by unique or grouped settings - carry it all out with BakeMaster!

1.1.2 Why creators choose BakeMaster

Baking standardly with Blender is ok. But what about baking dozens of models with a desire to have different settings, maps, masks, or view how baked maps will look like, make sure your objects have a correct shading set up, perform a Channel Pack, or any other highly requested task? It can easily lead to losing valuable time. Here is when BakeMaster comes into play. It can manage all of that in seconds and with a few clicks!

Have complex materials? Never worry about the nodes again: toggle a couple of settings, and BakeMaster will configure it all for you. Are Cycles maps gone? Not just yet - simple UI and manageable settings make it feel cool.

1.1.3 For whom is BakeMaster

Whether you come from Game Dev, prepare and texture your models, or bake for fun, BakeMaster is for you. The addon fits beginners as well as proficient users. Comfortable creation tools saving you time and making your artistic thoughts never jump out of the boat are vital.

1.1.4 Key features

THE SETUP

- *Installation*

- *Interface*

2.1 Installation

BakeMaster is a Blender addon, so if you haven't got the software on your device yet, go ahead.
Make sure the Blender version you use is compatible with BakeMaster.

2.1.1 Download BakeMaster

Download the latest BakeMaster addon version from the Blender Market or Gumroad.

Go to your Blender Preferences and install the downloaded zipped folder.

1. Open Blender

2. Go to `Edit > Preferences > Add-ons`

3. Click `Install`

4. Choose the downloaded zipped folder

5. Enable the addon

Uninstall previous versions

If you have a previous version of BakeMaster running, make sure you uninstall it first:
(Restart Blender after for changes to take effect)

Install the latest version

It is recommended to install the latest BakeMaster version, as it delivers more stability, improvements, and features.

Demo Version

The Demo version includes an overlook of the addon's interface. You can also download it from the GitHub repo. Go to the `install/` directory and download the zip. For the max experience, install the Full Version.

If you have any issues with installing the addon, feel free to reach out for help.

2.2 Interface

2.2.1 Access BakeMaster in Blender

BakeMaster can be accessed in the `3D Viewport`. Hit the `N` key on your keyboard and you'll see the side menu pop up on the right. Head over to the addon's panel called `BakeMaster`.

2.2.2 Addon's Interface

THREE

GETTING STARTED

- *Setup Objects*
- *Choose Maps*
- *Hit Bake*

3.1 Setup Objects

3.1.1 Choose Objects

To start settings up maps (image textures) for the mesh objects you want to bake, add these objects to the Table of Objects. Do it by pressing the `Add` button on the top:

Add Highpolies and Cages too

If you have highpolies or cages beside lowpoly models, add them to the Table too.

Quick selection

When you select an object in the table, it'll be quickly selected in the scene to inform you what's being edited.

3.1.2 Name Matching

BakeMaster can automatically match all your lowpolies, highpolies, and cages with each other.
To do so, press the button (Containers will form):

Naming Conventions

Objects get matched by the following suffixes:
(can be customized in the Addon Preferences)

	Lowpoly	Highpoly	Cage	Decal
Default suffix	`low`	`high`	`cage`	`decal`

Lowpoly name example	Gets matched to
`tram_low`	`tram_high` `tram_cage` `tram_high_decal`
`Headlight_low_1`	`Headlight_high_1` `Headlight_cage_1`
`Headlight-back_low_55`	`Headlight-back_high_55` `Headlight-back_cage_55`
`monster_body`	*Won't get matched*

> **Caution:**
>
> BakeMaster determines naming suffixes between _ (underscores) in the Object name.
>
> Unmatched objects won't be grouped into containers.

3.1.3 Additional Controls

The Table of Objects provides additional controls for the Objects in it:

3.1.4 Object settings

Select the object in the Table of Objects to configure its settings.

High to Lowpoly

Mind this section if you plan to bake from high to lowpoly meshes.

UVs and Layers

Configure crucial UV and other settings for the object like bake to Image Textures or Vertex Colors.

Shading Correction

Let BakeMaster save you time with important mesh normals and shading correction that can decrease the number of projection glitches when baking from highpoly.

Decal Object

When baking decals separately, configure Decal Object baking.

Bake Output

Specify how you want to output the baked result.

3.2 Choose Maps

3.2.1 Add Maps first

Each object has a list of added maps. The slideshow below will guide you through.

Map Types

BakeMaster can bake 36 different map types, here are some of them:

3.2.2 Map settings

Besides the map type mentioned above, there's more to tweak.

Map Customization

Real-time Preview

Preview how the map will look when baked!

Format Settings

Configure output format settings for maps.

Map Unique Settings

You can make High to Lowpoly, UVs and Layers, or Format Settings unique for each map. For this, turn on `Unique per map` in these panels. Then, select a map and customize the settings.

3.3 Hit Bake

3.3.1 Start the Bake

BakeMaster Bake won't block anything, so you can continue creating while it's doing its magic.

3.3.2 While waiting

Control the baking process from your keyboard or Blender Console. All keybindings are present below and under the `Bake Instruction` field in the Bake panel.

- Press `BACKSPACE` to cancel baking all next maps

- Press `ESC` key to cancel baking the current map

- Press `BACKSPACE`, `ESC` to cancel baking

Tip: Blender Console

By opening the Blender Console you'll see more precise bake process feedback and be able to press `Ctrl + C` or `Cmd + C` (Mac) to abort the bake.
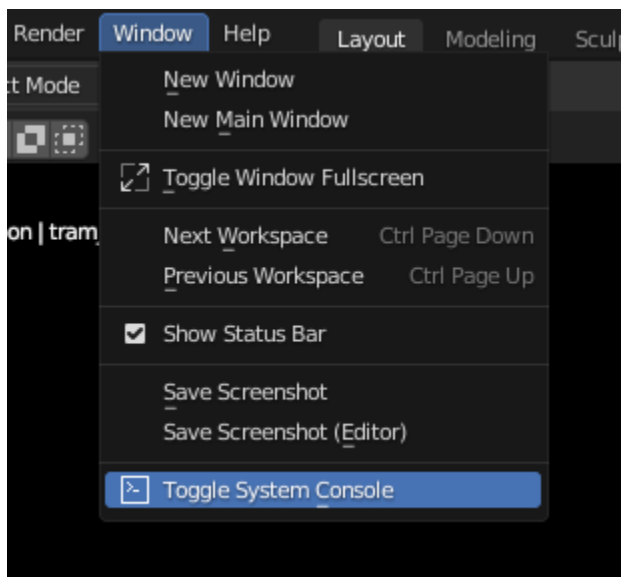
Caution: Blender freezes are expected when handling meshes with large amounts of geometry, baking map results to modifiers, Denoising baked results, or UV unwrapping and packing. Please be patient, BakeMaster will notify you if any error occurs.

ADVANCED

- *No Limits*
- *Save Time*
- *Get Best Results*

4.1 No Limits

4.1.1 Denoising Maps

Baking with a low sample count might result in image noise. Enable denoising (noise reduction) in the map's Format Settings.

> **Caution:** Note that *on some occasions* denoising maps like Albedo or Normal mightn't be a good idea as it might blur out some sharp details.

4.1.2 Supersample anti-aliasing

With SSAA, BakeMaster bakes at a higher resolution and then downscales back to the chosen map resolution. Such a technique results in smoother and jaggy-free images (not always noticeable). Enable SSAA in the map's Format Settings.

4.1.3 Channel Packing

Channel Packing is commonly used in the Game Dev industry when there's a need to pack baked maps into image color channels to save memory usage. For example, you can have a single image file baked, where the Red channel holds Metalness, the Green carries Roughness, and the Blue one - AO.

With BakeMaster, you can easily configure Channel Packs and have any maps packed.

Channel Pack type

Imagine having Channel Pack types, with which you can pack not only in the R+G+B way but also RGB+A or R+G+B+A. BakeMaster allows you to do even that.

4.1.4 Texture Sets

A Texture Set is a set of images baked for one object. By default, BakeMaster will save baked maps for each object into separate Texture Sets. Meaning there will be sets of image files for each object. In some cases, you might want, for example, an Albedo map for ten objects baked onto a single image file. BakeMaster allows doing so and even with automatic UV Repack if needed.

Follow the instruction below, If you want some objects to share the same Texture Set.

4.1.5 PBR-Metallic and PBR-Specular

Blender supports only PBR-Metallic workflow, but BakeMaster can bake both PBRS and PBRM types. It'll correctly recalculate the Metallic workflow used in your materials, giving a clear and clean PBRS output, and then restore all materials back after baking. You can add both PBR-Specular and PBR-Metallic maps to the Table of Maps.

PBR-Metallic:

PBR-Specular:

The examples of PBRS and PBRM bakes shown above were baked with BakeMaster.

(more about PBR-Metallic and PBR-Specular workflows)

How BakeMaster names maps of both workflows

PBR-Metallic: `AlbedoM`, `Metalness`, `Roughness`;
PBR-Specular: `AlbedoS`, `Specular`, `Glossiness`.

You can always specify your custom map naming in the `Prefix` field of the Map Settings area.

4.1.6 Create a Bake Job Group

You can create a new Container and choose objects to put in it. That will act as a Bake Job. With Bake Jobs, you can choose maps and set identical settings for all objects in them at once. Follow the slideshow below to build one up:

> **Caution:**
>
> Only objects not in Containers already can form a new Bake Job Container.
>
> Read more about Containers in BakeMaster.

4.1.7 Visibility Groups

Objects in a single Visibility Group might cause an effect on each other when baking (where meshes intersect). That can result in intersection errors or cage glitches.

1. You can fix this by enabling the `Hide when Inactive` option in the object's Bake Output panel.

2. Or by putting objects that shouldn't affect others into separate Visibility Groups.

4.1.8 Batch Name Preview

BakeMaster allows you to customize the naming pattern of the output filenames in the `Batch Name` field in the object's Bake Output panel. That gives a lot of control over output image naming. But sometimes, it's hard to get an idea of what the filename will be.

Luckily, there's the `Preview Batch Name` operator that can do just that!

4.1.9 Match Resolution

If you have image textures in the object's materials and want to bake maps with similar resolutions, check out the `Match Resolution` operator.

4.1.10 Containers

A Container holds a group of objects that can share the same settings. It can consist of Lowpolies, Highpolies, and Cages Subcontainers that carry objects of their corresponding type.

Containers become available when Name Matching is enabled.

Additional features

You can expand/collapse formed containers and rename them to your liking.

A Container can share the same settings for all its objects.

For this, toggle the `Global` option for the Container.

4.1.11 Addon Preferences

Some influential settings sit in the addon preferences.
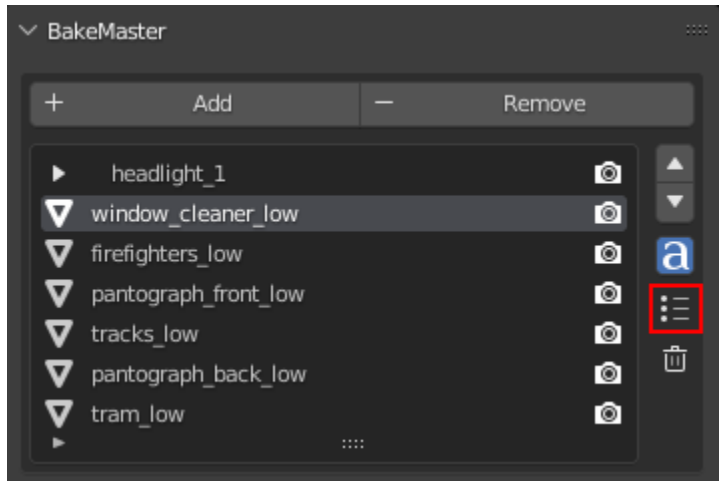
4.2 Save Time

4.2.1 Presets

BakeMaster allows saving Settings Presets for everything.

Simple Presets

Save the settings of any addon's panel.

Advanced Presets

Full Object Preset can load all settings at once for one object, or the ones you specified. With that preset, you can save settings from all panels, including all added maps.

4.2.2 Apply Lastly Edited Setting

Sometimes, you can have many maps or objects, and there's one specific setting you need to be similar. It's always possible to click a couple of times to set it, but BakeMaster has a cool feature to save you time: `Apply Lastly Edited Setting` located in the Bake panel.

4.3 Get Best Results

4.3.1 Baking from highpoly

Texture baking often includes transferring high-resolution mesh details to a low-res model. Models with loads of geometry require more computer power, and details sometimes aren't even noticed in the final production. On the other hand, lowpoly model is easier to handle, and you can bake high-resolution details onto it.

Read more about how you can set up High to Lowpoly bake in BakeMaster.

4.3.2 Understanding Cages

A Cage is an inflated copy of your base lowpoly model. When baking highpoly details onto a low-res mesh, a Cage limits the distance of shot detail-capturing projection rays.

The Cage should expand far enough to cover all highpoly geometry for best results. Expanding the Cage too far may cause glitches as projection might intersect other meshes in the scene.

In BakeMaster, you can choose a Cage object you created or specify the `Extrusion` value to inflate the lowpoly.

4.3.3 Decrease Baking time

Map resolution

When choosing a higher map resolution, consider whether it'd be noticeable in the output rendered image, estimate the distance from the camera to that specific model, its relative size in the render, and how many details would be distinguished.

What's the best sample count

Baking time also increases when setting the sample count very high. It'll result in cleaner and smoother bakes, but you can keep them pretty low and use Denoising later.

AO fragment, how long the bake took:

4.3.4 PBR-Metallic and PBR-Specular

PBR stands for physically based rendering workflow that uses enhanced lightning and shading techniques to make textured models more realistic and believable. Because all the data isn't in a single image, it reproduces light bounces, reflections, and other microsurface details more accurately. And with global illumination and indirect light sources, it enhances the realism of the scene.

There're two PBR workflows existing: PBR-Metallic and PBR-Specular.

PBR-Metallic

The most used type of PBR texturing is PBR-Metallic, and a wide range of software supports it. PBRM consists of Albedo, Metalness, and Roughness maps.

1. Albedo holds color data without any light or shadow impact, just the color itself.

2. Metalness map is a grayscale image describing which parts of a model are metal and which are not.

3. Roughness is also a grayscale map that carries which parts are rough and which are reflective.

PBR-Specular

This type of workflow is used less widely but is excellent for its ability to represent reflectiveness more precisely. It uses Diffuse, Specular, and Glossiness maps.

1. Similarly to the PBR-Metallic, the Diffuse map stores only color data, without any light or shadow impact, but metallic parts of the model are black on this map, as they have no diffuse color.

2. Specular map determines the color of specular reflections, metallic parts of a model are vibrant and colorful, while non-metallic are grey (`Hex#383838`).

3. Glossiness map is an inverted copy of the Roughness map explained previously. It describes glossy and rough parts of a model.

The workaround with BakeMaster

Read how you can bake maps of both workflows in BakeMaster.

4.3.5 Help system

The Help panel offers a couple of buttons that will take you to the corresponding pages of BakeMaster's online documentation you're currently reading.

MORE

- *Connect*
- *Releases*

5.1 Connect

5.1.1 Useful links

Submit a Review

Rate BakeMaster on the Blender Market.

Product Support

Ask me a question on the Blender Market.

Submit an Issue

Have an issue? Submit it.

Feature Request

Describe your dreams. Submit a feature request.

Announcements Channel

Watch for the news in the BakeMaster Chat and the Announcements on GitHub.

5.1.2 Contact and chat

BakeMaster GitHub Discussions
    BakeMaster Demo version repository, where you can submit an issue, feature request, or have a dev talk. Or have
    an eye on whether I'm keeping up with the dev deadlines .

BakeMaster Discord
    The Discord chat for discussion, questions, announcements, thoughts, and more.

Reach the author directly

    `kirilstrezikozin@gmail.com`
    telegram
    instagram
    discord username: `kemplerart#1586`

5.1.3 Special thanks

Shoutout to the whole BakeMaster Discord squad (even considering it's relatively small).
Each of you lifts my spirit and soul to continue development!
BakeMaster is BakeMaster, thanks to you!

Shoutout to each BakeMaster financial supporter.
You give me additional driving force!

This documentation was made using Sphinx, Furo, and hosted with ReadTheDocs.

5.2 Releases

All BakeMaster Releases and Changelogs are listed on this page. Each new release comes with new features, improvements, or fixes. For clarity, each section has a `tag` to identify the changes.

5.2.1 2.0.0 Release

Tag

2.0.0 - Under development

Powerful update, refactor of the whole addon.

Features.

5.2.2 1.1.0 Release

Tag

1.1.0 - October 6th, 2022

Presets functionality added.

Features.

5.2.3 1.0.0 Release

Tag

1.0.0 - September 12th, 2022

The first release of BakeMaster Blender Addon.

Features.