

Buto

A Game-Ready Asset by [OccaSoftware](#)

Need Help?

If you run into any issues or have any questions, please don't hesitate to contact me by email or on Twitter.

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Introduction

Buto enables you to easily add real-time stylized volumetric fog to your scene. One Render Feature, One Material. That's it.

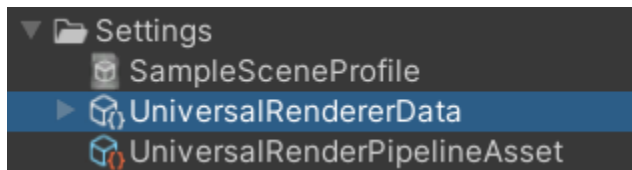
Designed for **Unity 2021.3 LTS Universal Render Pipeline (URP)**.

Features

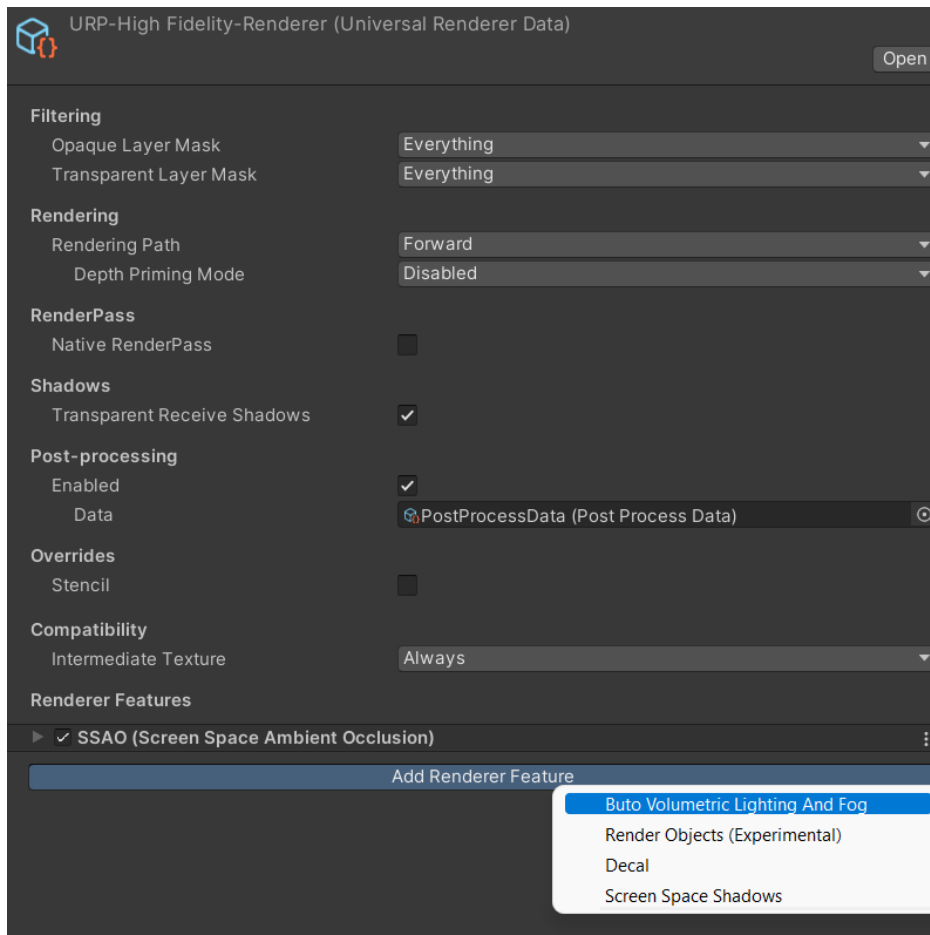
1. Physically-based volumetric lighting and fog generates an accurate simulation of atmospheric particles.
2. Optimized, high-performance rendering at half scale resolution with intelligent depth-aware upscaling.
3. Built-in volumetric noise gives depth and texture to the particle distribution.
4. Particle density exponentially decreases over height resulting in atmospheric height fog.
5. Analytic height fog is rendered behind the nearby ray-marched volumetric fog to guarantee long-range visual consistency.
6. Distance-based Color Ramps, Color Ramp influence, and Light and Shadow intensity sliders give you creative stylized fog options.

First Setup

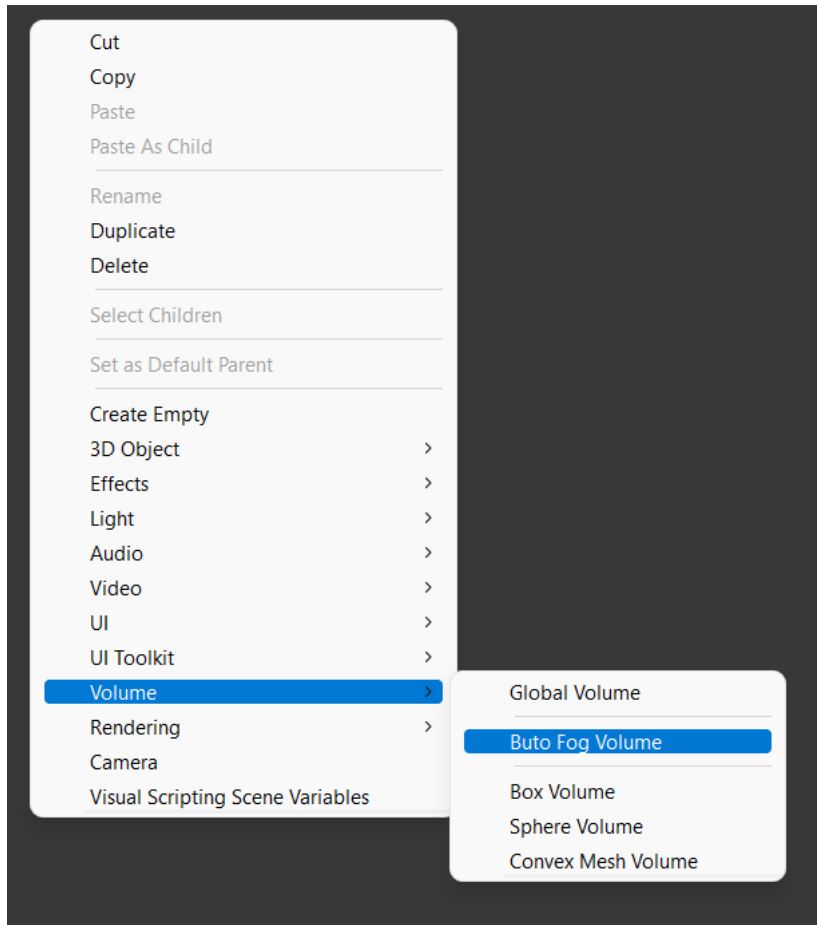
Navigate to your Universal Renderer Data asset. Click on it.



In the Universal Renderer Data Inspector, click “Add Renderer Feature” and choose “Buto Volumetric Lighting and Fog”

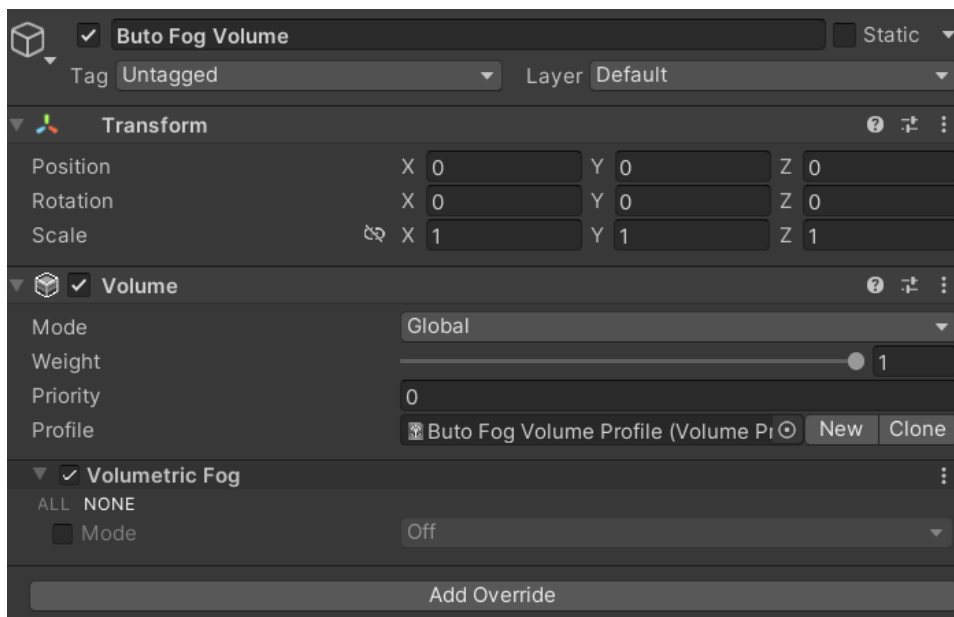


In your Hierarchy, right click, then go to Volume, **Buto Fog Volume**



Create a new Volume Profile.

Then click Add Override -> Volumetrics -> Buto Volumetric Fog.



Configure the Volumetric Fog override according to your scene requirements.

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Additional Fog Types

You may want different types of fog depending on your scene. Simply add a Global Volume to the scene and configure accordingly. You can save Volumetric Fog presets as Volume Profiles.

Note that a single scene can contain any number of Buto Fog Volumes. By using the built-in Unity Volume system, you can configure local Box and Sphere volumes as well.

Configuring Volumetric Point Lights

1. On any Game Object, add the **Buto Light** component
2. Buto will now treat this Game Object as a Volumetric Point Light
3. You can add a Light component to the same Game Object and have the Buto Light inherit the characteristics of the Light component. The easiest method is as follows:
 - a. Toggle on the property, **Inherit Data From Light Component** in the Buto Light component.
 - b. Click the button, **Check or Add Light Component**. A light component will be added if one is not already present on the Game Object.
 - c. Configure the **Light** component's **Intensity** and **Color**.
4. Note that Volumetric Point Lights do not account for shadow attenuation
5. When more than 8 Buto Lights are available in the scene, Buto will automatically cull all but the closest 8 lights. Note that this incurs a slight performance cost.

Configuring Fog Density Masks

1. On any Game Object, add the **Fog Density Mask** component
2. Buto will now treat this Game Object as a Fog Density Mask
3. You can have as many as 8 Fog Density Masks render concurrently in a scene.
4. When more than 8 Fog Density Masks are available in the scene, Buto will automatically cull all but the closest 8 masks. Note that this incurs a slight performance cost.

5. You can set Fog Density Masks to act additively with a global Fog, or to act as the only fog sources in your scene. This setting is available on the Fog Volume override menu.

Creating a custom Color Ramp

Your Color Ramp texture can have any dimensions. However, be aware that it is sampled as follows:

X coordinate is selected by the relative distance from the camera to the end of the volumetric fog.

Y coordinate is pre-determined for each color type. For each x coordinate,

- **Shadow Color** is selected from the center of the bottom third of the image,
- **Lit Color** is selected from the center of the center third of the image,
- **Emission Color** is selected from the center of the top third of the image.

For example,



The Color Ramp is selected using Point filtering.

I recommend using **Adobe Color** to identify color ramps and using **GIMP** to create it.

If you'd like an easier method to create new Color Ramps, do submit a feature request by email to occasoftware@gmail.com. You can use the following subject line:

Subject: New Feature Request (Buto): Easier Color Ramp Creation

Contact

If you encounter any issues at all, please don't hesitate to contact me at occasoftware@gmail.com