Found a bug, need a feature or help with implementation. Contact at:
fx.valley.contact@gmail.com or join Discord https://discord.gg/3ssjcBcgpu

Installation & Setup
v1.0.1

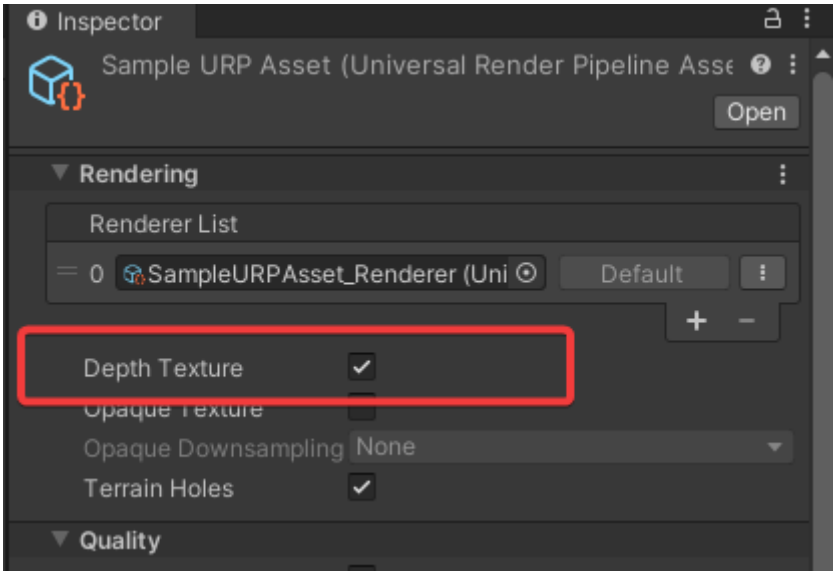
1. **BuiltIn Render Pipeline**

- After importing you will need to install the Built In RP package *FXV/VolumeFog/*InstallBuiltIn.*unitypackage* that contains all required assets.

2. **Universal Render Pipeline**

- After importing you will need to install the URP package *FXV/VolumeFog/InstallURP.unitypackage* that contains all required assets.

- For all features to work properly depth texture needs to be enabled in *Universal Render Pipeline Asset:*



Package contents

- Each render pipeline has its own demo scenes:

  BuiltIn:
  FXV/*VolumeFog*/Demo/Demo*.unity

  URP:
  FXV/*VolumeFog*/URP/Demo/Demo*_URP.unity

  Scene named DemoShowcase contains all fog types placed on one scene for quick preview, while scenes Demo1, Demo2, Demo3 show some interesting use case scenarios.

- Fog functionality is handled by two scripts:

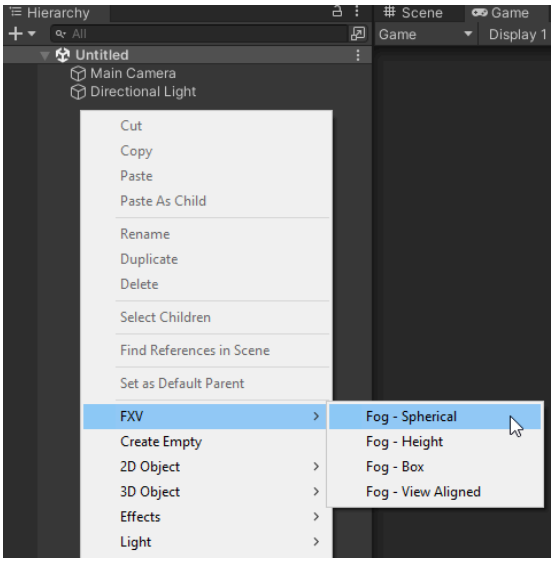
FXV/VolumeFog/Scripts/**VolumeFog**.cs - handles all the functionality and rendering of single fog volume.

FXV/VolumeFog/Scripts/**VolumeFogGroup**.cs - might be added as parent of multiple VolumeFog objects to control their parameters as a group.

- There are shaders for Lit and Unlit rendering for each fog type, and both render pipelines. These shaders are handled automatically by **VolumeFog** script, there is no need to manually setup materials.

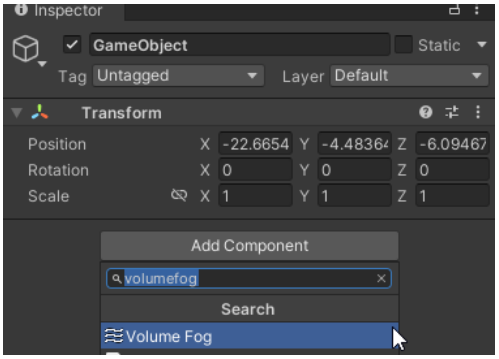
Creating fog volumes

1. The simplest method to create new fog volume is to Right Click in hierarchy panel - select FXV -> Fog **type**



This is limited to a few fog types but fog type can later easily be changed in the **VolumeFog** component inspector.

2. Second method is to add **VolumeFog** to an empty game object. Everything will be initialized by the script.



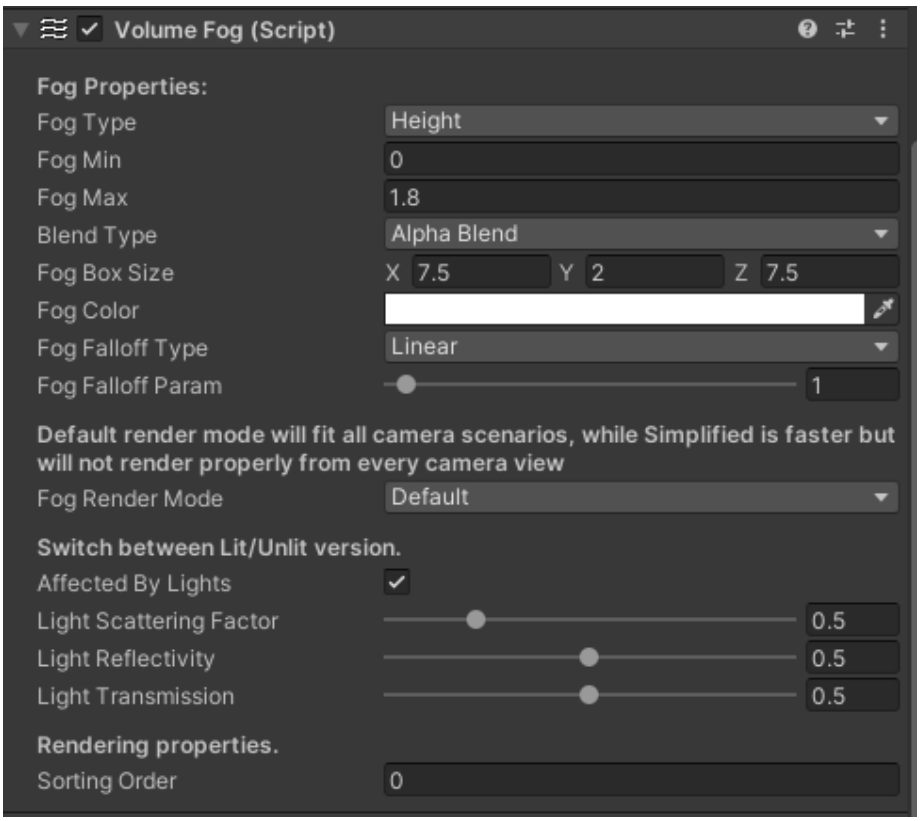
Resizing fog volumes

For box type fog volumes **(**see **Available Fog Types** below) adjust **Fog Box Size** property to resize it on scene.

For sphere fog volumes adjust **Fog Max** parameter to specify its size.

Configuring fog volumes

Every parameter of the fog is set up in **VolumeFog** component:



Fog Type	Most important parameter that defines how fog is rendered. Selecting this will configure a specific shader variant. See **Available Fog Types** part of this document for all fog types description.
Fog Min/Fog Max	Those two values will define where fog starts and ends - or where the fog has 0% density and 100% density based on Fog Type selected.
Blend Type	Blending mode Alpha Blend or Additive - **Unlit shader only**
Fog Box Size	Size of the box volume for the fog - this is only available for box

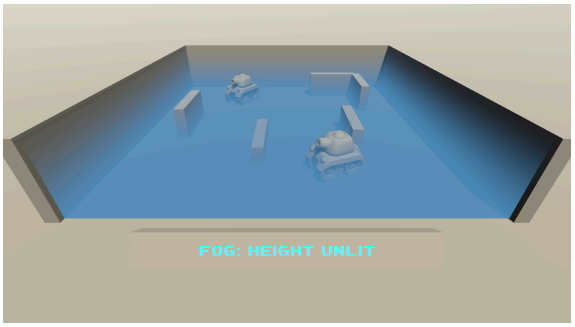
	shaped fog types. Spherical fog types will define its size based on the **Fog Max** parameter.
Fog Color	Color of the fog - this is the color at 100% density. Use alpha for less dense fog.
Fog Falloff Type	Function for fog interpolation between 0% and 100% density - choose the one that best fits your use case.
Fog Falloff Param	Parameter for tweaking interpolation smoothness/shape.
Fog Render Mode	**Default** - will work for most use cases including camera inside fog. This is the most universal render mode. **Simplified -** does less calculations making shader faster, but will not render properly when the camera is inside fog, or fog volume is viewed from specific angles. This mode might be thought as fake volumetric rendering that will only work for specific camera types - like Top Down camera.
Affected By Lights	Switches between **Unlit** and **Lit** versions of the shader. Lit shader will work with **Point** and **Directional** Lights.
Light Scattering Factor	[Lit Only] How much fog scatters light inside fog volume. Use this to tweak light effect strength, size and shape.
Light Reflectivity	[Lit Only] How much light is reflected from fog particles inside volume. Use this to tweak light effect strength, size and shape.
Light Transmission	[Lit Only] How much light is transmitted by fog particles inside fog volume. Use this to tweak light effect strength, size and shape.
Sorting Order	Fog is rendered as a transparent object. This means that it will be using the Unity transparency sorting algorithm. Change this if you need to render fog volume before or after some other objects.

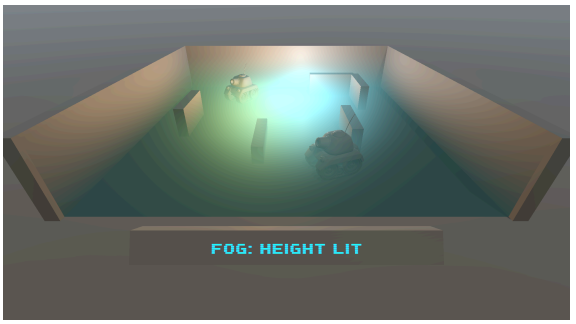
Available Fog Types

Fog Type is the most important setting and the first that should be selected, as it defines how other parameters will behave.

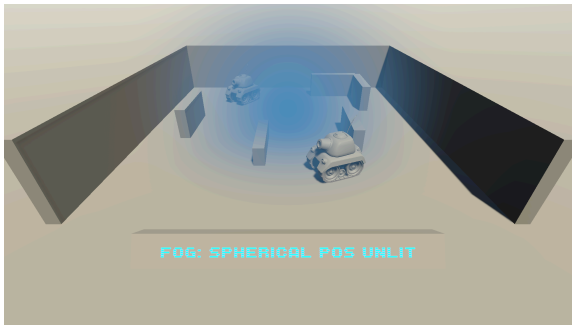
- **Basic Fog Types**

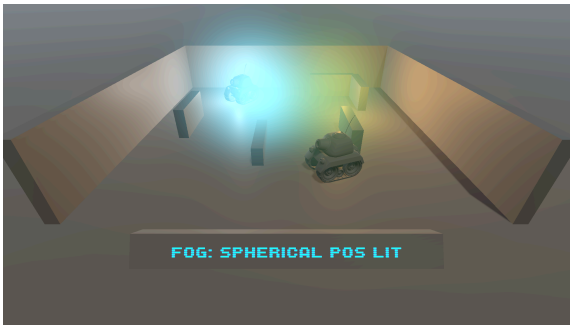
  - ☐ **Height** - Fog density is distributed on the object's local Y axis.



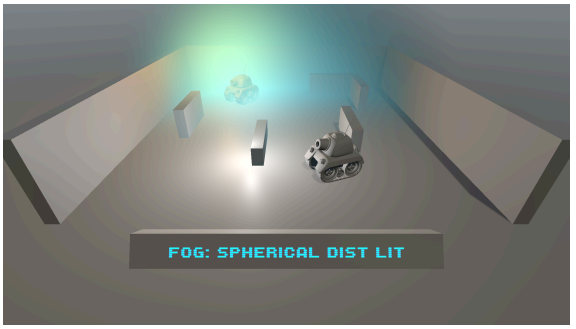


  - ☐ **SphericalPos -** Fog density is distributed inside sphere volume, density depends on point position 100% at sphere center - 0% on sphere radius.

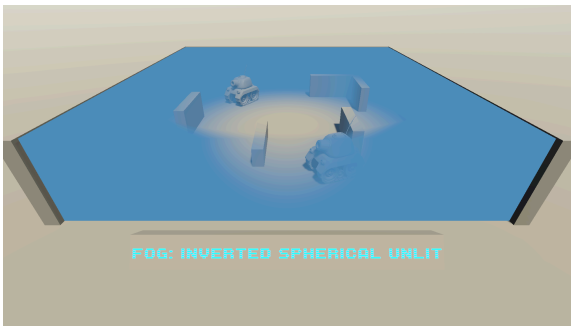


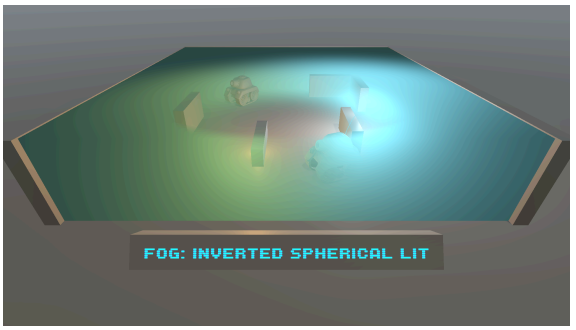


  - ☐ **SphericalDist -** Fog density is distributed inside sphere volume, density depends on the distance that view ray travels inside sphere volume.

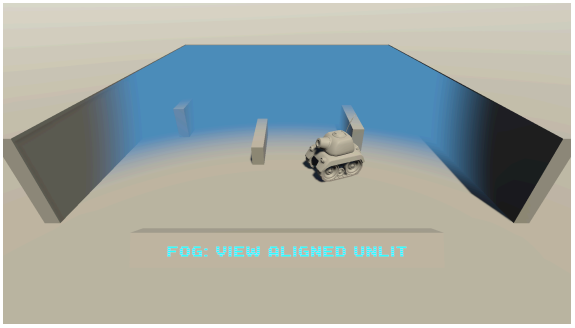


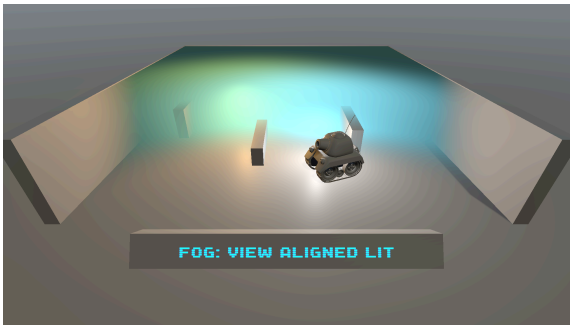
- **InvertedSpherical -** Fog is rendered inside box volume, but there is a spherical area without fog in the center of the volume. This might be useful for Battle Royale type games.



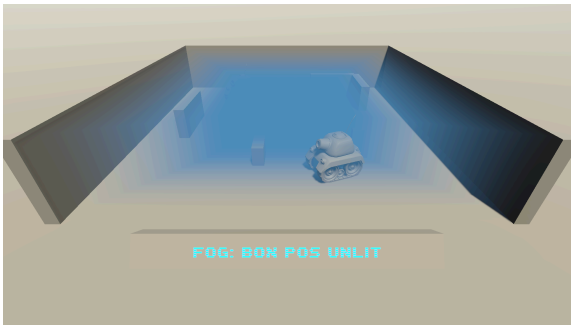


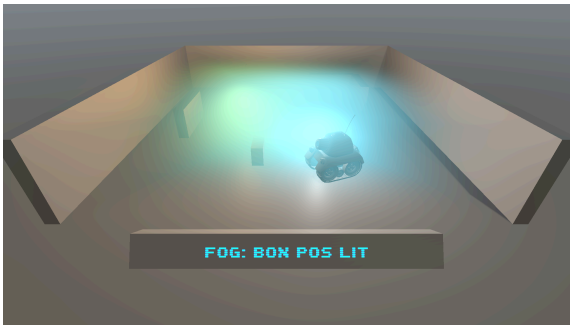
- **ViewAligned -** fog is rendered relative to camera position and view. This is as the default global fog is rendered but - in this case it's limited to specific box volume.



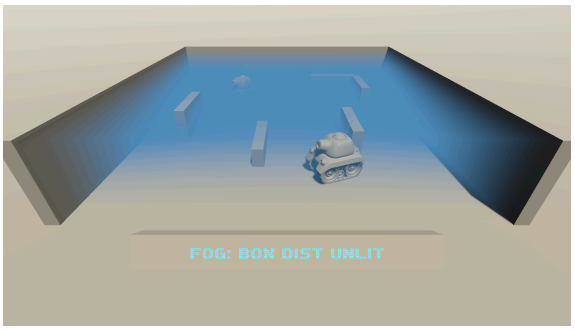


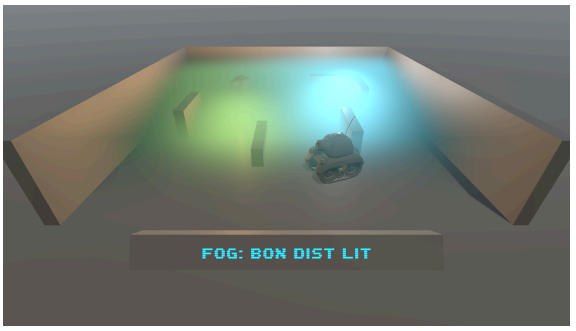
- **BoxPos -** Fog is rendered inside box volume - density depends on position and distance from the center of the box.



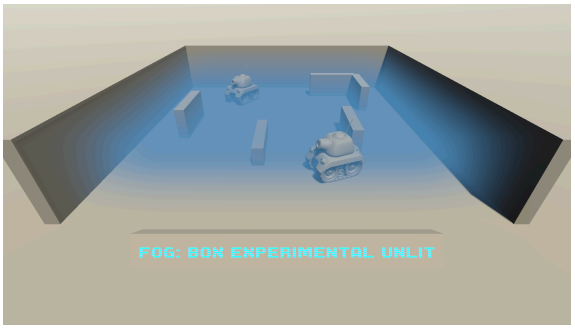


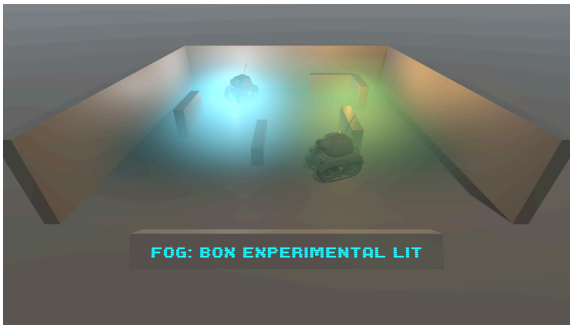
☐ **BoxDist -** Fog is rendered inside box volume - density depends on the distance that view ray travels inside box volume.





☐ **BoxExperimental -** This is a more complex fog type, that renders inside box volume. It works similar to BoxPos - density depends on position and distance from the center of the box, but it's much smoother. There are however some imperfections when looking from different angles. Select the best type for your use case.

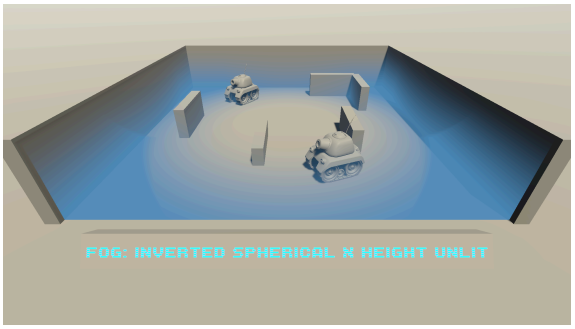


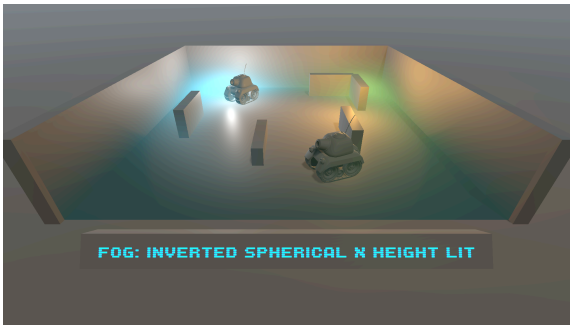


- **Mixed Fog Types**

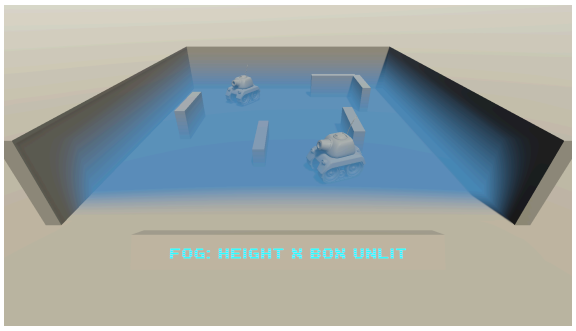
Those special fog types are mixing two Basic Fog Types to achieve better visual results like smooth edges for height fog.

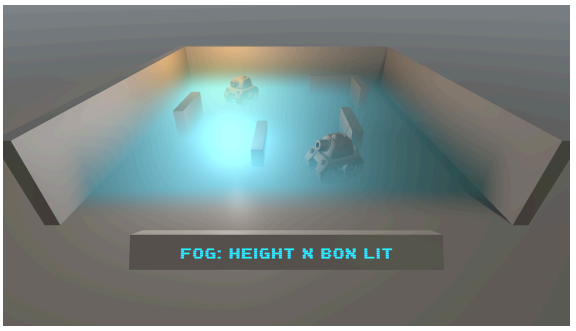
☐ **InvertedSphericalXHeight**



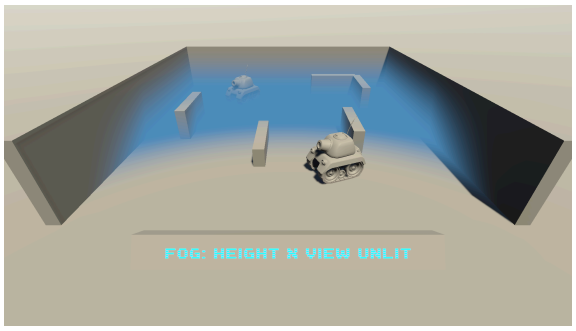


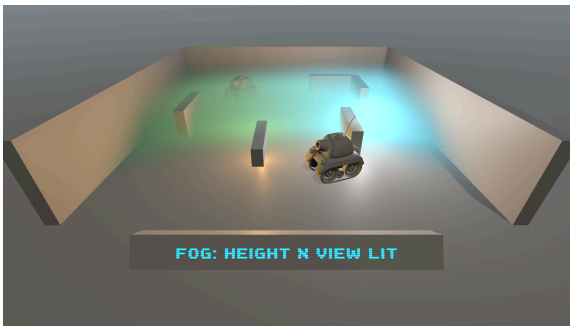
☐ **HeightXBox**



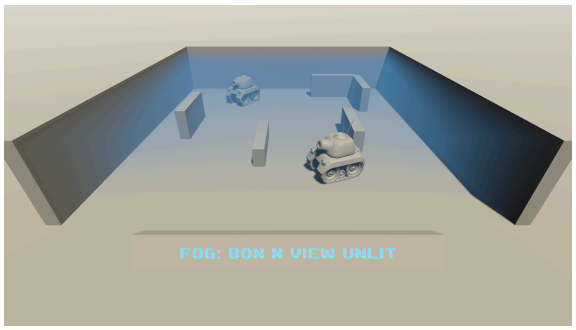


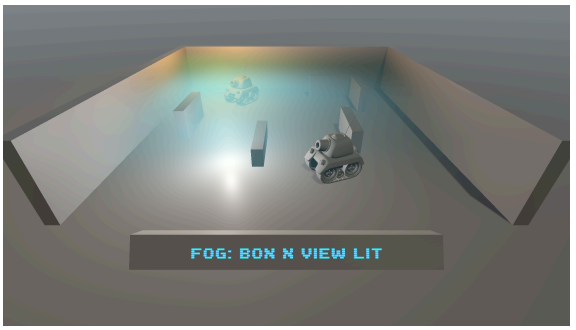
☐ **HeightXView**





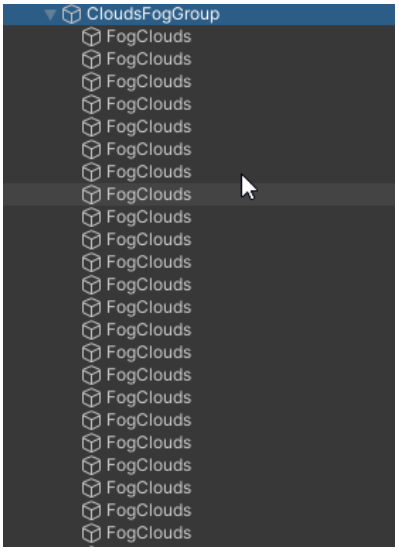
☐ **BoxXView**





Using Fog Groups

The **VolumeFogGroup** component is useful for control of multiple similar fog volumes. It allows changing parameters of multiple fog objects at once. VolumeFogGroup must be added as the parent game object of multiple VolumeFog objects. In a screenshot below VolumeFogGroup is added to *CloudsFogGroup* object, and *FogClouds* objects are VolumeFog objects.



VolumeFogGroup allows changing:

Color - overwrite
Falloff Param - this one is multiplied by original value.
Lighting parameters - overwrite lighting setup of original object.

To enable control of specific parameters by the group - turn on the corresponding checkbox.