Dark Smoke

This tutorial shows how to modify the sprite smoke effect to create a dark smoke effect.

You created a basic sprite effect by completing the Create a Sprite Smoke Effect in Niagara tutorial. In this tutorial, learn how to duplicate an emitter, create a Niagara system from a pre-existing emitter, and make further adjustments to change the look of the smoke.

Prerequisite Steps:

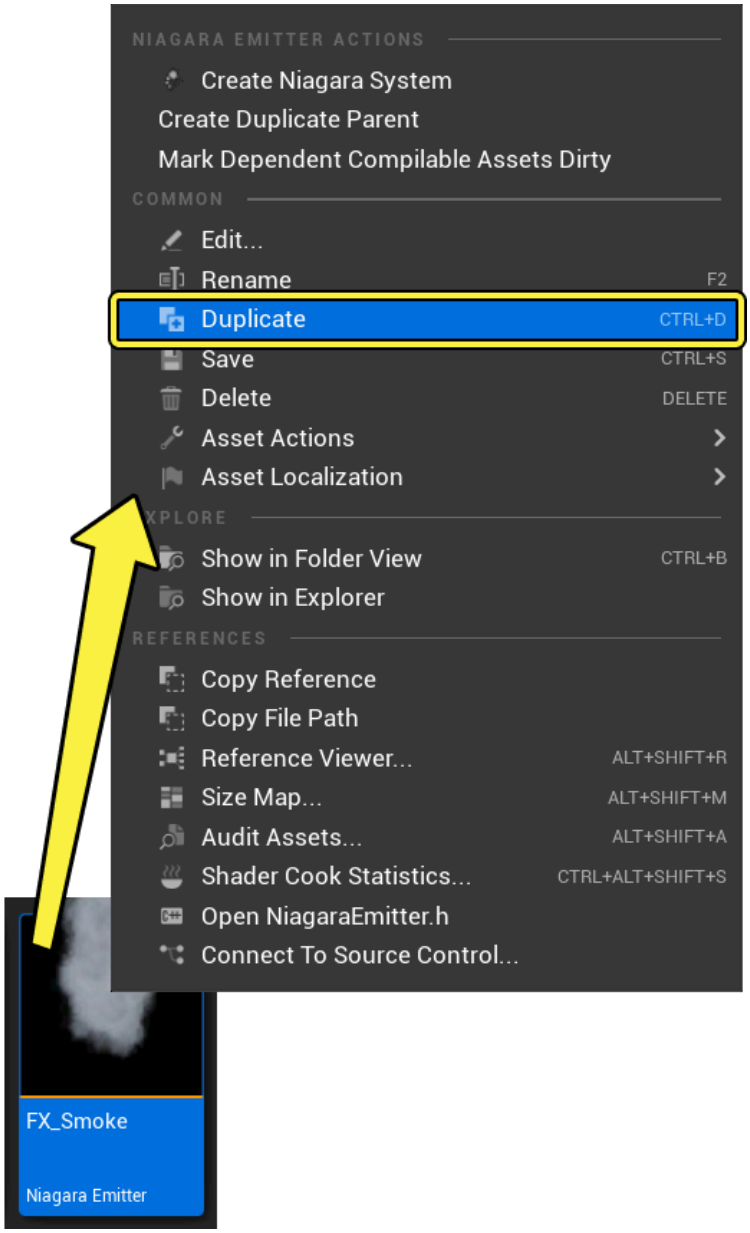
This how-to uses the **M_smoke_subUV** Material, which can be found with the Starter Content. If you have not done so already, make sure that your project includes the Starter Content. This how-to also uses the **FX_Smoke** emitter created in the tutorial Create a Sprite Smoke Effect in Niagara.

Create System and Emitter

You can create a Niagara system from scratch by right-clicking in the Content Drawer as has been done in previous tutorials. However, if you already have a saved emitter to use as a starting point, it's also possible to duplicate it and start from there.

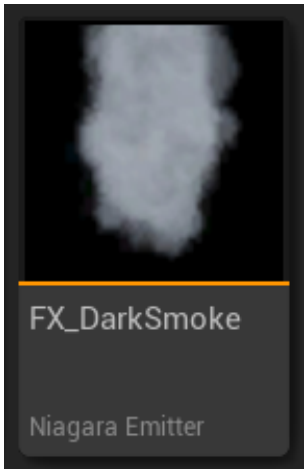
1. Create a new folder for this tutorial in the Content folder for your project.

2. Make a copy of the **FX_Smoke** emitter you created in [Create a Sprite Particle Effect in Niagara](#).

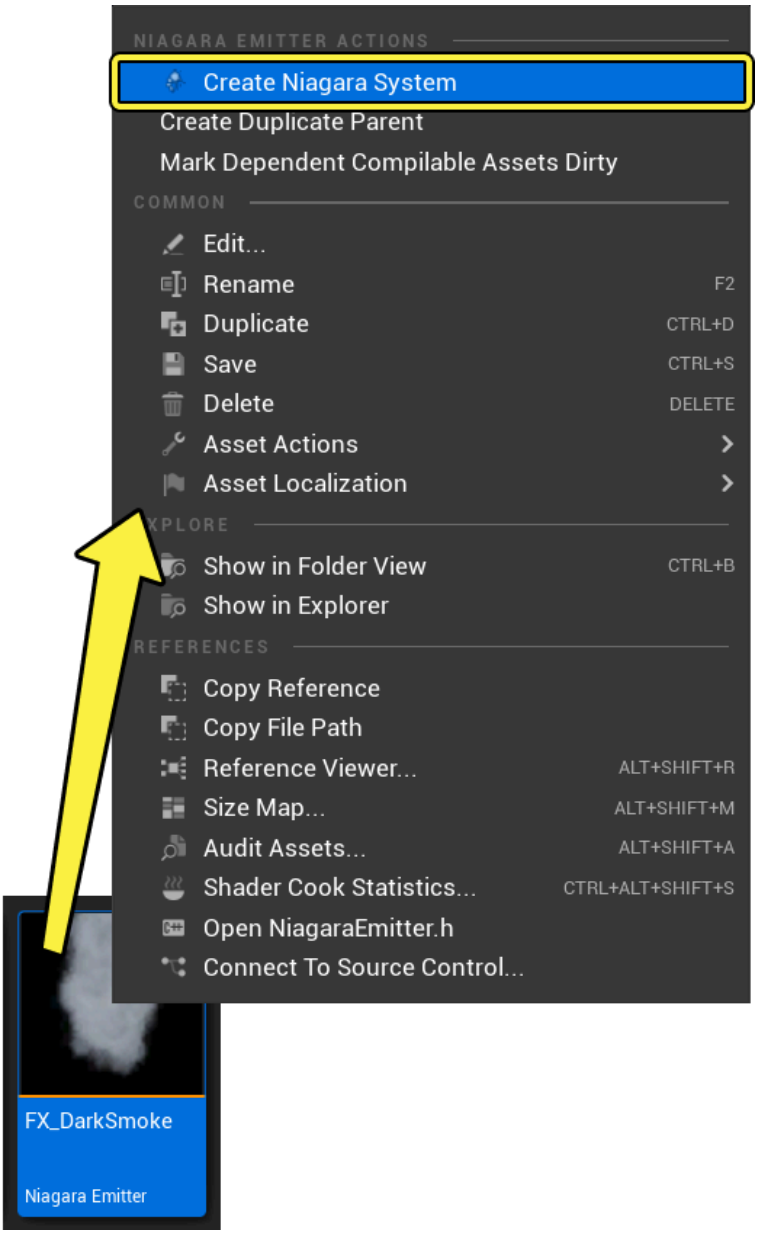


Click image for full size.

3. Drag this duplicate emitter to the folder you created in step 1. In the popup context menu, select **Move**.
4. Rename the copied emitter **FX_DarkSmoke**. This distinguishes it from the smoke effect created in the [Create a Sprite Smoke Effect in Niagara](#) tutorial.



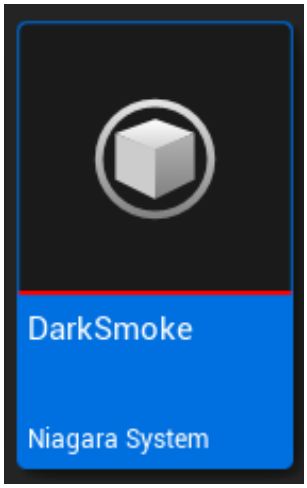
5. Right-click on your new smoke emitter, and select **Create Niagara System**.



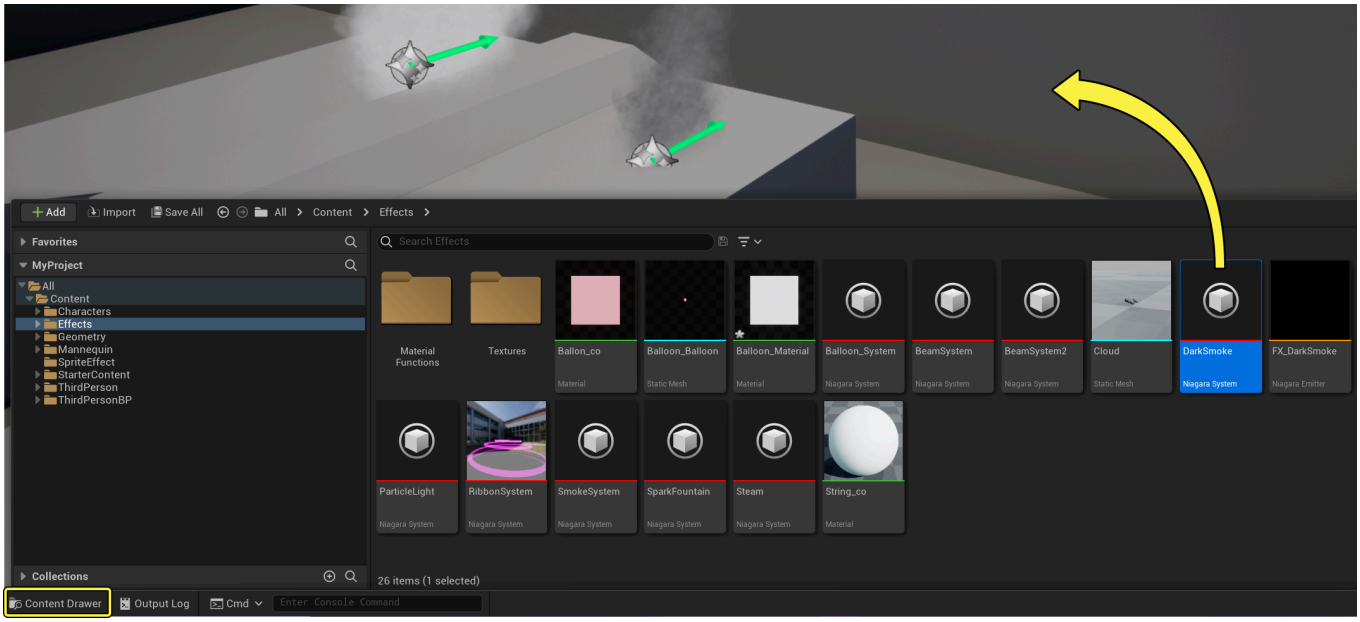
There are multiple ways to create new Niagara systems. Because you are starting with an emitter you have already created, the method used here quickly creates a system

containing that emitter.

6. Name the system **DarkSmoke**. This is to distinguish it from the smoke effect created in the [Create a Sprite Smoke Effect in Niagara] tutorial.



7. Drag the DarkSmoke system from the **Content Drawer** into your Level, so you can preview the changes in the context of your project's world.



Click image for full size.

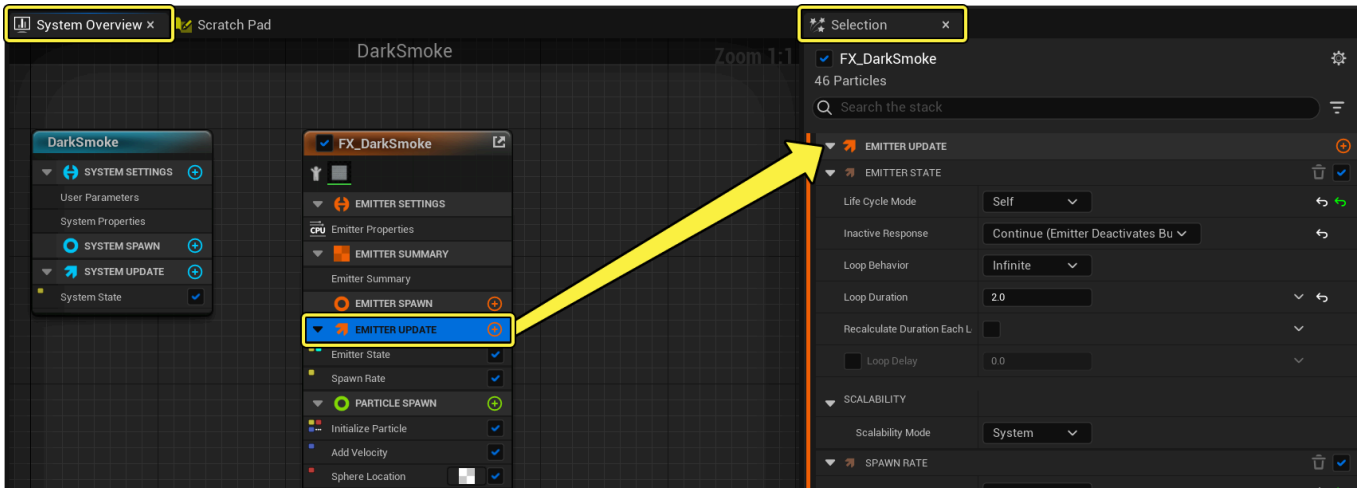
When you make a particle effect, it is always a good idea to drag your system into your Level. This gives you a chance to see every change and edit in context. Any changes you make to the system automatically propagate to the instance of the system in your Level.

8. Double-click the **FX_DarkSmoke** emitter to open it in the Niagara Editor. After you have edited the settings in the emitter, you will need to save the DarkSmoke system also.

Edit the Emitter Update Settings

First you will edit the modules in the **Emitter Update** group. These are behaviors that apply to the emitter itself, and that update each frame.

1. In the **System Overview**, click the **Emitter Update** group to open it in the **Selection** panel.



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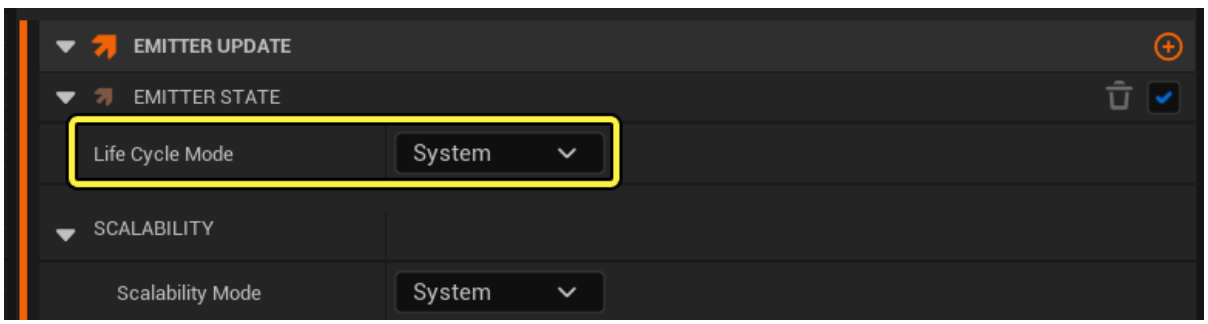
2. Expand the **Emitter State** module. This module controls time and scalability for this emitter. Because you used the Simple Sprite Burst template, the **Life Cycle Mode** is set to **Self**.

   Normally this is used for complete customization of emitter life cycle logic for this specific emitter, but it is not needed for this effect. Click the dropdown and set the **Life Cycle Mode** to **System**. This enables your system to calculate life cycle settings, which usually optimizes performance. By default, the system loops infinitely on a 5 second interval.



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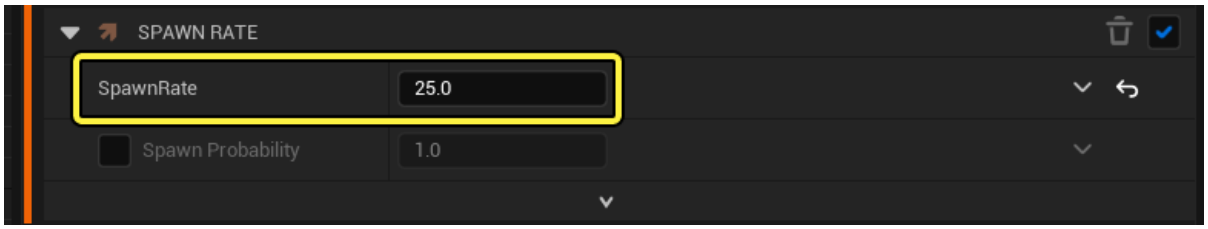
3. Open the **Spawn Rate** module. Set the **Spawn Rate** to **25**.



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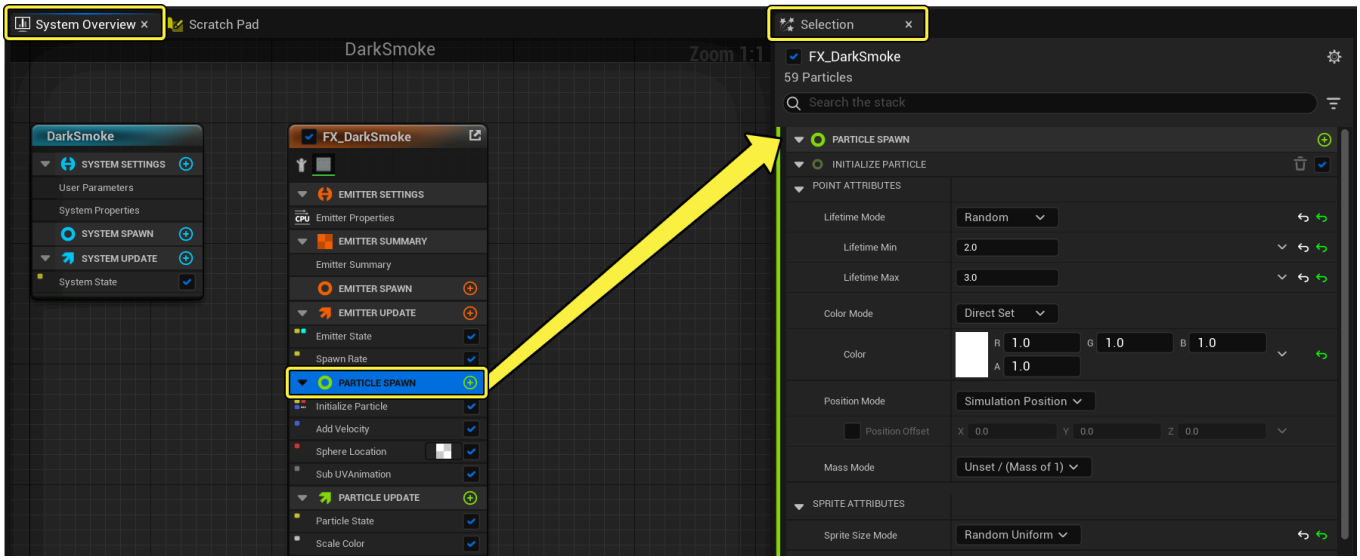
Edit the Particle Spawn Settings

Next, you will edit the modules in the Particle Spawn group. These are behaviors that apply to particles when they first spawn.

1. In the **System Overview**, click the **Particle Spawn** group to open it in the **Selection** panel.



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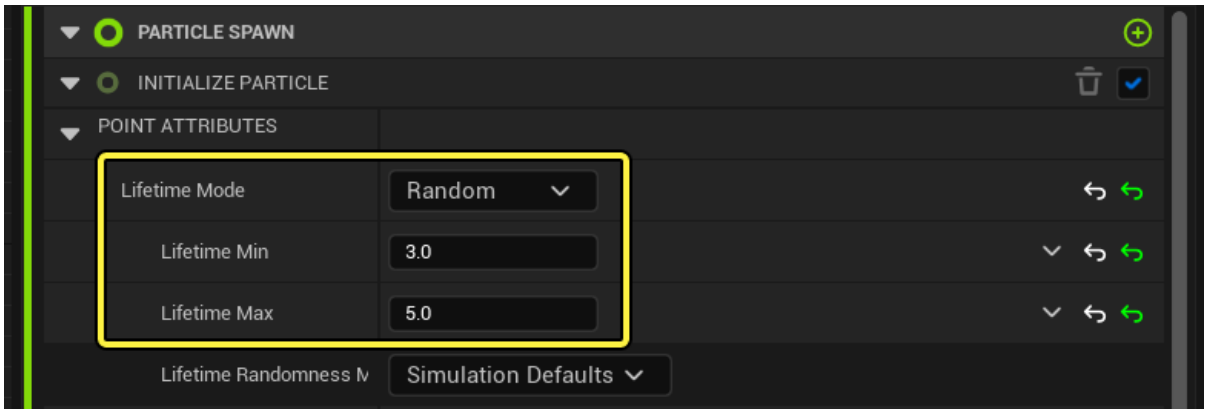
2. Open the **Initialize Particle** module. Under **Point Attributes**, expand **Lifetime**. The Lifetime parameter determines how long particles will display before they disappear. Change the **Lifetime Mode**, **Minimum** and **Maximum** values to the following.



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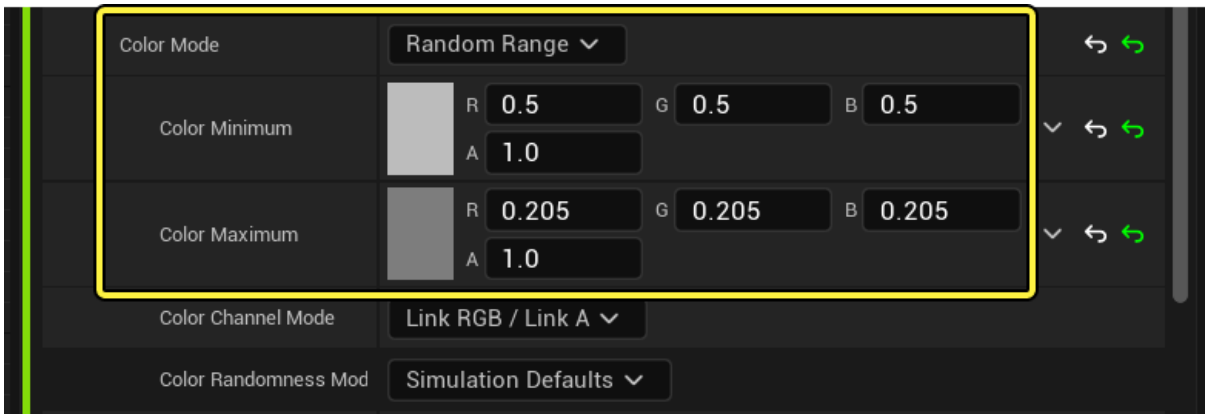
Parameter	Value
Lifetime Mode	Random
Minimum	3.0
Maximum	5.0

3. Expand **Color**. You can set the smoke to a single color, or change the **Color Mode** to **Random Range** to get some variability in the color of each particle. Change the RGB values to the following:



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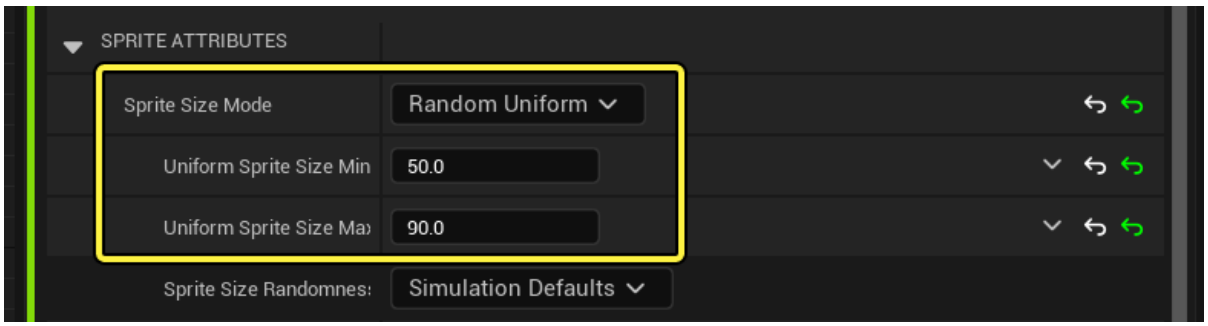
Color	Minimum	Maximum
Red	0.5	0.205
Green	0.5	0.205

Color	Minimum	Maximum
Blue	0.5	0.205

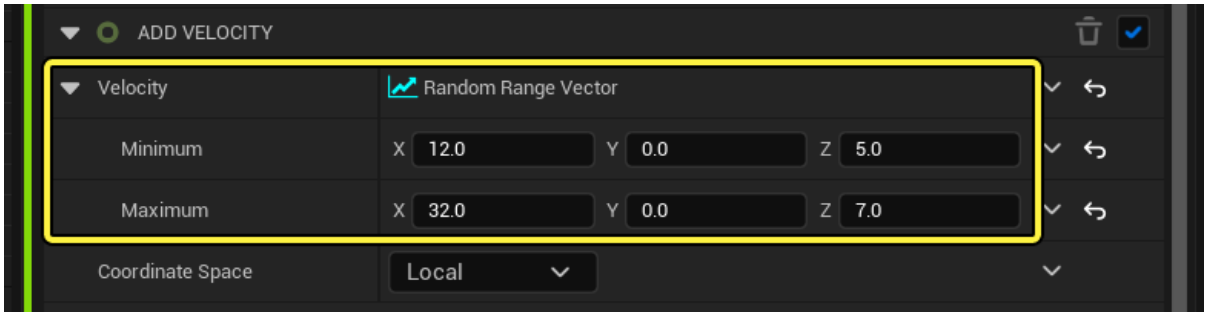
4. Under **Sprite Attributes**, expand **Sprite Size**. Make sure **Sprite Size Mode** is set to **Random Uniform**, which gives minimum and maximum values. New particles will be created at a random size between these values. Change the **Minimum** and **Maximum** values to the following:



Click image for full size.

Parameter	Value
Minimum	50
Maximum	90

5. Open the **Add Velocity** module. In the previous tutorial, we had set the Velocity to Random Range Vector. This adds Minimum and Maximum values. Each new particle that is created has a random value between these two ranges set for its initial velocity. Change the **Velocity** Minimum and Maximum values to the following:



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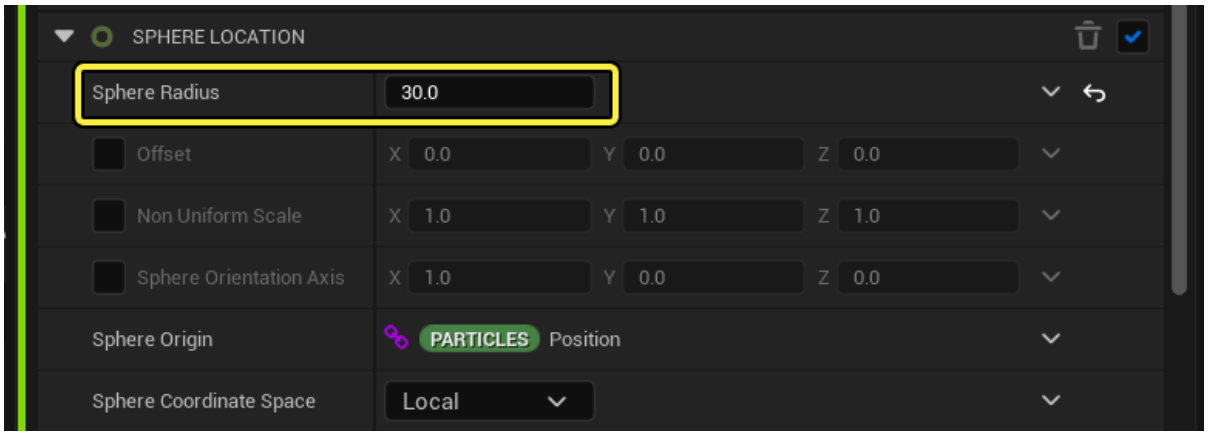
Value	Minimum	Maximum
X	12	32
Y	0	0
Z	5	7

6. Open the **Sphere Location** module. New particles are generated within the sphere when they are first created. Change the **Sphere Radius** value to **30**.



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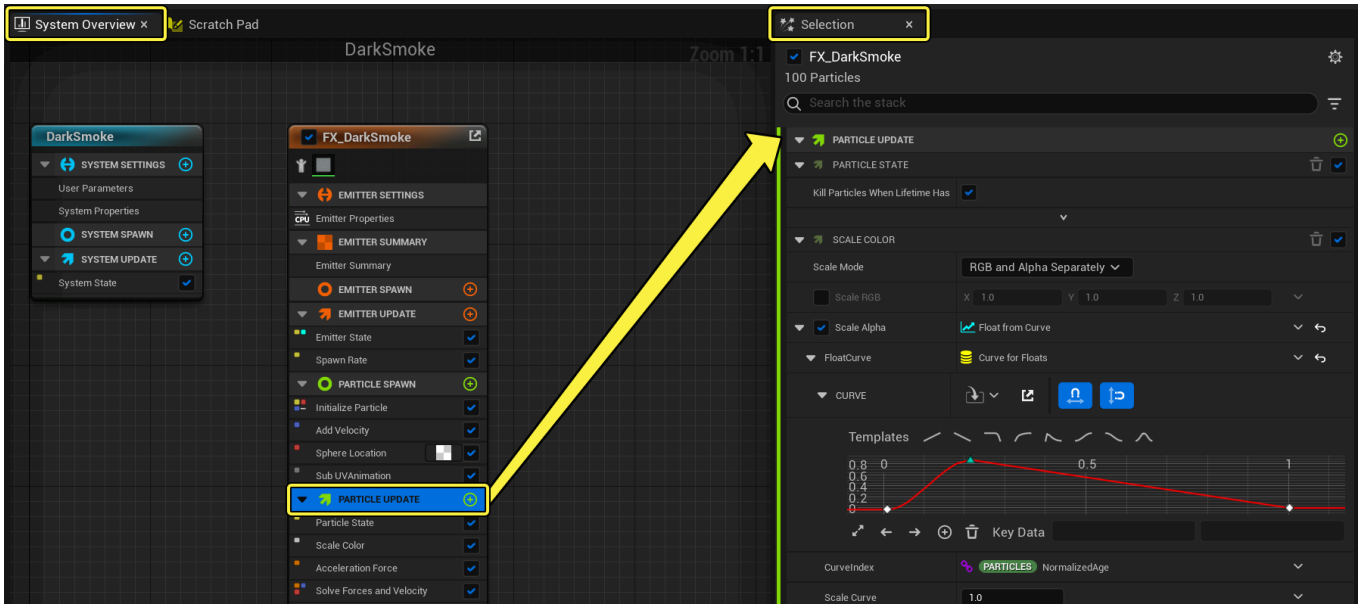
Edit the Particle Update Settings

Now you will edit the modules in the **Particle Update** group. These behaviors apply to an emitter's particles and update each frame.

1. In the **System Overview**, click the **Particle Update** group to open it in the **Selection** panel.



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2. Open the **Acceleration Force** module. Set the Acceleration **Z** value to **20**.

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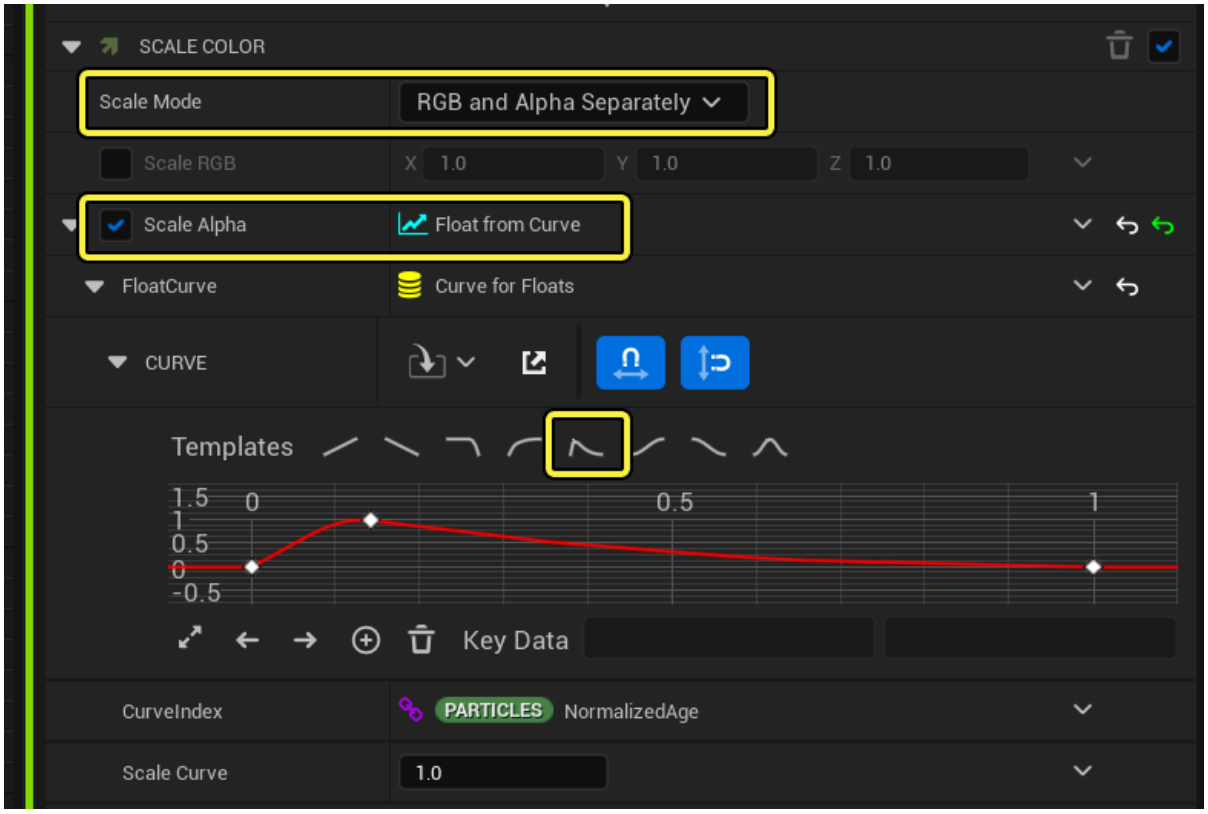
3. Open the **Scale Color** module. Make sure the **Scale Mode** is set to **RGB and Alpha Separately**. You only want to adjust the alpha values so that the color fades in and then pulses out as the particle ages. **Scale Alpha** should be set to **Float from Curve**. Click on the **Pulse** template in the curve editor to quickly apply this shape to the curve.



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End Result

After following these steps, the Smoke system in your level will produce a smoke effect similar to the one in the image below.