



Documentation

2.4.0

Thank you for buying

Enviro - Sky and Weather



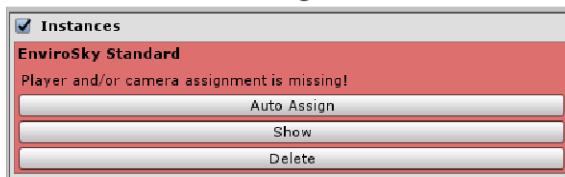
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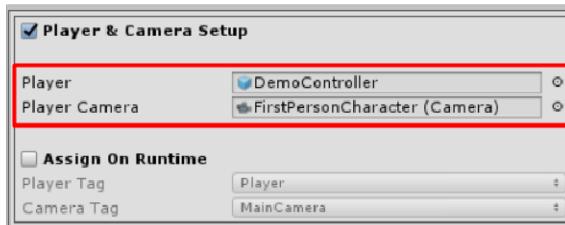
Getting Started

It's really easy to setup enviro in your project! Import the package and follow these easy steps to get started!

1. Click on “Assets” -> “Create” -> “Enviro” -> “Enviro Sky Manager”. This will create a new “GameObject” in your scene with the Enviro Sky Manager component.
2. Now select the “Enviro Sky Manager” object in your scene. From here you can add different preconfigured enviro instances. For example click on “Create Standard Instance”. After that take a look in “Instances” section by activating the checkbox. You should see a red box with your newly generated enviro instance. Click on “Activate” here.
3. Now we need to assign camera and if exist your player object. For a quick setup you can use the “Auto Assign” button in Enviro Sky Manager -> Instances window.



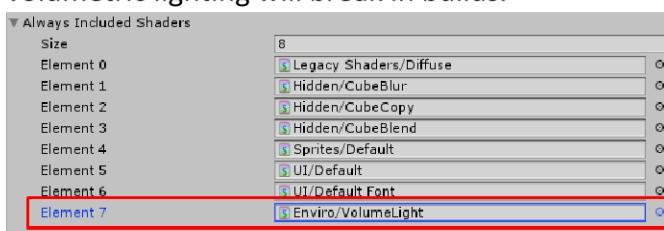
For manual or runtime assignment you have to click on the “Show” button. Then click on the “Player & Camera Setup” checkbox. Assign your “Player” and your “Player Camera” **OR** check “Assign On Runtime” and choose your tags.



4. *Disable other directional lights in your scene!*

Only needed for “Standard” Enviro version. (Not needed for Lite and URP users!):

5. You also need to add the “Enviro/VolumeLight” shader to the “Always Included Shader” list in Unity graphic settings (Edit -> Project Settings -> Graphics). Otherwise volumetric lighting will break in builds.





Basics

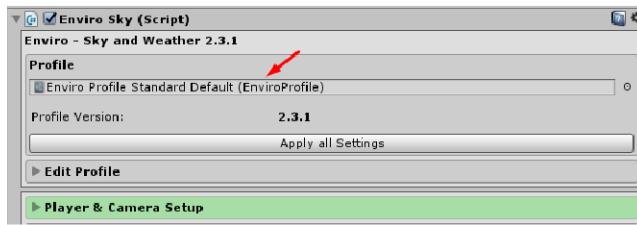
Okay now the basics! The final sky output will be controlled in two separate parts. First the global “**Enviro Profile**”, second the current active “**Weather Preset**”.

Profiles

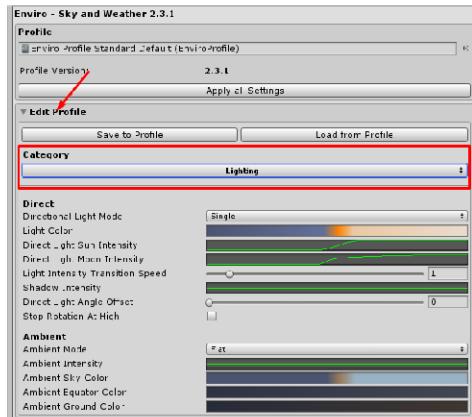
This object will hold all global information and can be saved and loaded in run- and design time!

- To create a new profile do a right click in your project folder and choose:
Create -> Enviro -> Profile

You can assign your profile at the top of EnviroSky inspector:



Click on “Edit Profile” in EnviroSky inspector to open the profile section.



Here you can save and load profiles with the click on the buttons.

Please note enviro never touches your profile directly!

Enviro only will overwrite your profile when you click on “Save To Profile” and only overwrite the runtime settings when you click on “Load from Profile”!

If you tweaked the settings in runtime and want them saved you have to save in runtime and load them when you are back in designtime!

Also worth noting is that you have to use the “**Category**” dropdown menu to get access to all the different settings.



Weather Presets

These objects will hold all information to change the look of your sky based on current weather. For example you have options to change the sky, clouds, fog and lighting. Here you also can add particle effects and audio effects to create weather that can smoothly change over time.

- To create a new weather preset do a right click in your project folder and choose: Create -> Enviro -> Weather Preset

Enviro - Weather Preset
Setup a new weather type here. Change clouds, lighting, audio and so on and add this preset to one of your enviro weather zones to make it usable in enviro weather system. Do not forget to set a unique name in 'General Configs'!

▼ General Configs

Unique Name
Name

Sky and Light Color

Weather Sky Mod
Weather Light Mod
Volume Light Intensity
Shadow Intensity Mod

Weather Condition

Wind Intensity
Maximum Wetness
Maximum Snow
Temperature Modification
Lightning Storm
Lightning Interval

Particle Effects

Aurora Settings
Aurora Intensity

► Season Configs
► Clouds Configs
► Fog Configs
► Distance Blur Configs
► Audio Configs

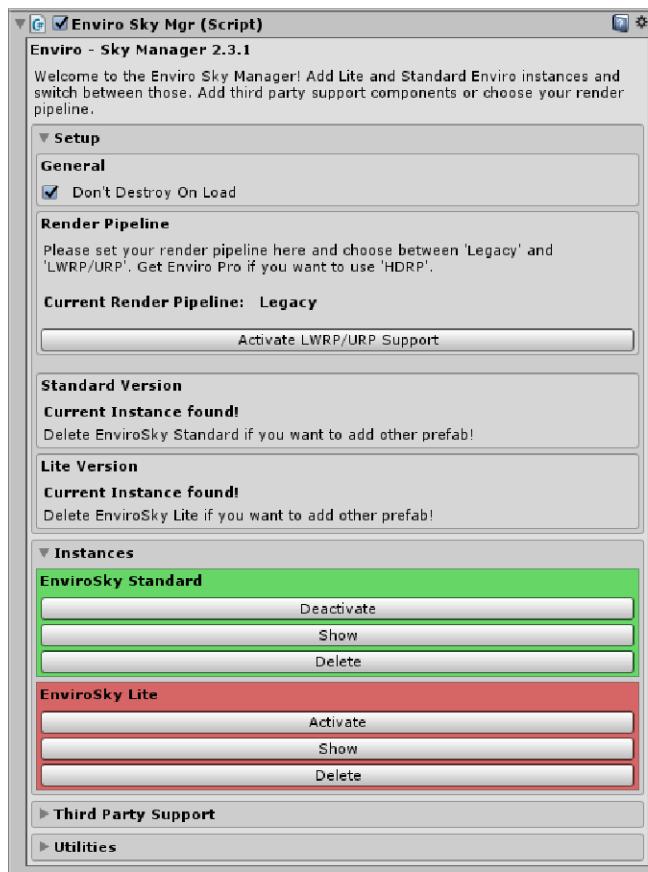
Enviro only can use a weather preset, once it is added to a zone! To add your weather presets to the system you have to assign it in one of your "Enviro Zone" components. There already is a default zone on the EnviroSky object. More about zones later!

Also note that every weather preset needs a unique name to be correctly working.



Enviro Sky Manager

Add preconfigured enviro instances, manage them and switch between standard and lite version. You also can choose your render pipeline here and activate/add third party support integrations.



General:

Activate “Don’t Destroy on Load” if you use enviro in multiple scenes and you want to keep them “alive” after load.

Render Pipeline Setup:

Switch between URP/LWRP and Legacy Render Pipeline here. With the Enviro Pro upgrade you also can switch to HDRP here.

Instance Creation:

Create new instances here. You have to delete an instance to create a new one of the same type.

Instances:

Shows you Instances. You can activate or deactivate, start and stop or delete instances here. Jump to instance

configuration with a click on “Show” button.



URP Support

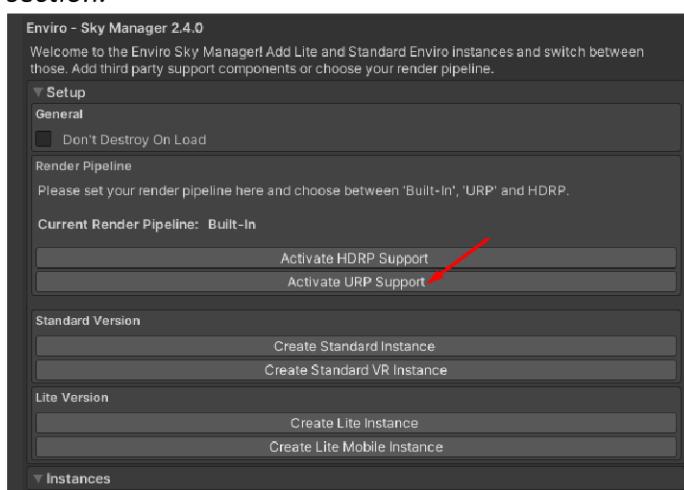
Activate and setup Enviro for use in URP.

Requirements:

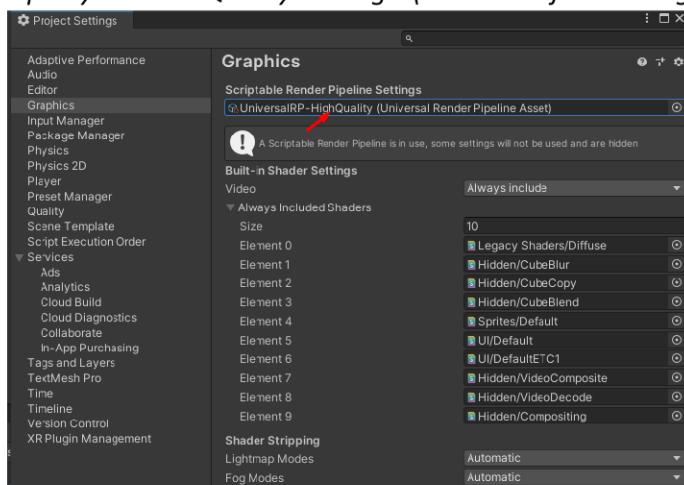
Unity 2019.4+ with URP 7.X or higher.

Setup:

1. Setup enviro described in "Getting Started" section.
2. Click on Enviro Sky Manager in your scene and activate URP Support in Render Pipeline section.

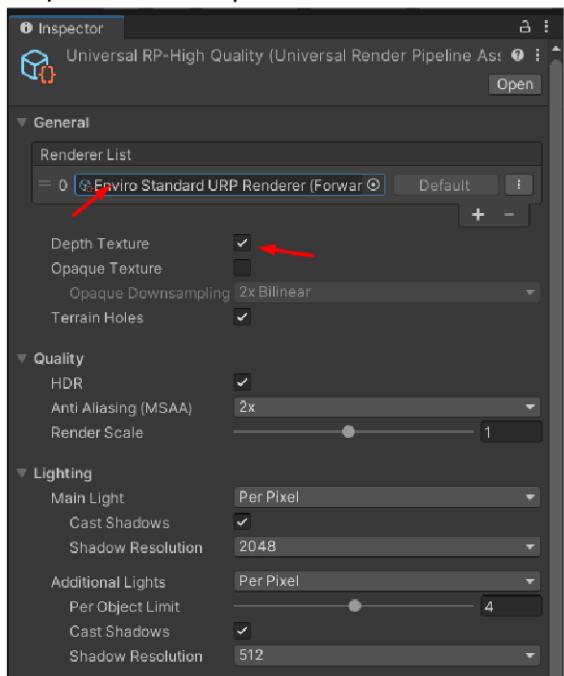


3. Open your URP Quality Settings. (Edit -> Project Settings -> Graphics)





4. Assign the "Enviro Standard URP Renderer" or "Enviro Lite URP Renderer" Also enable "Depth Texture" option.



5. Repeat last step for all your URP Qualities Assets.



HDRP Support

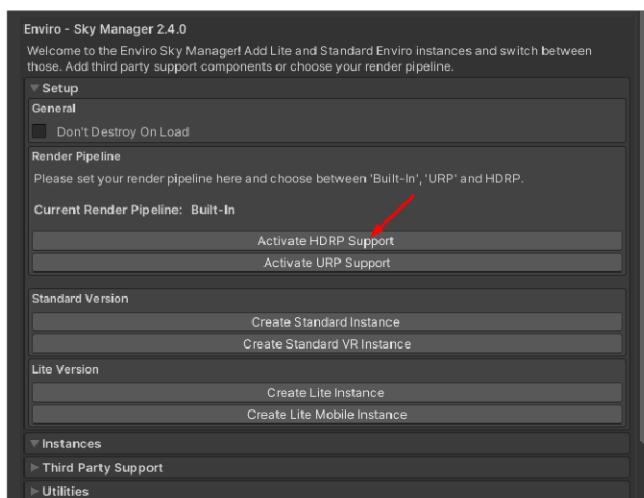
Activate and setup Enviro for use in HDRP.

Requirements:

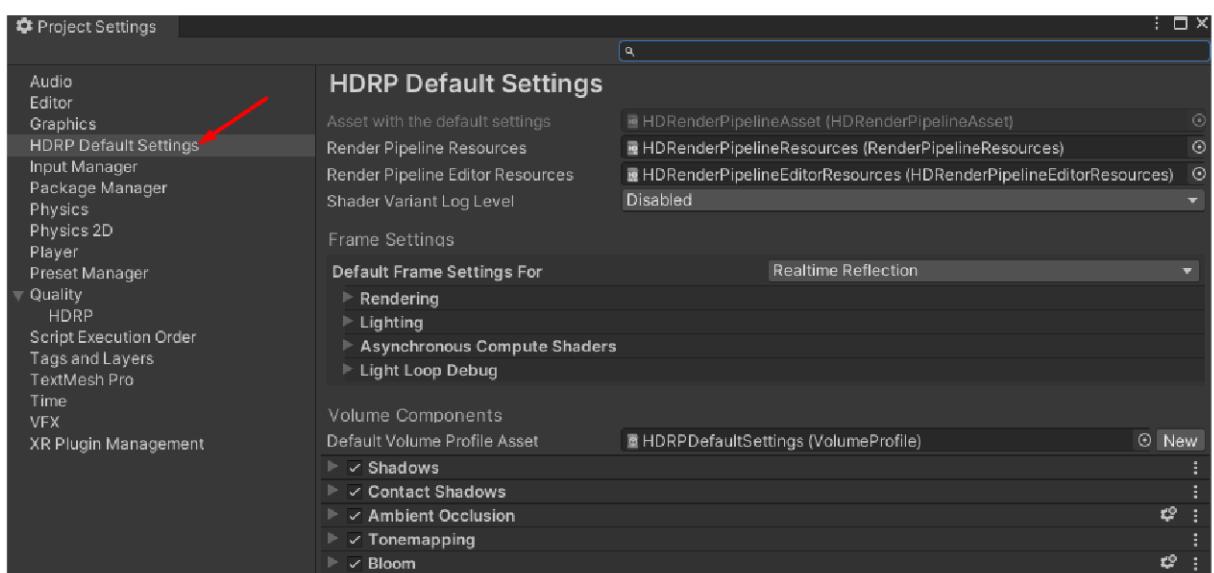
Unity 2019.4+ with HDRP 7.6 or higher.

Setup:

1. Setup enviro described in "Getting Started" section.
2. Click on Enviro Sky Manager in your scene and activate HDRP Support in Render Pipeline section.



3. Open your Project Settings -> HDRP Default Settings/HDRP Global Settings and assign the Enviro Effects in this order shown in screenshots:





Order: Clouds -> Fog -> Distance Blur -> Sunshafts -> Moonshafts:

Add Override

LookDev Volume Profile Asset DefaultLookDevProfile (VolumeProfile) New

► Tonemapping

► Shadows

► Ambient Occlusion

► Bloom

Add Override

Custom Post Process Orders

After Opaque And Sky

- = UnityEngine.Rendering.HighDefinition.EnviroHDRVolumClouds
- = UnityEngine.Rendering.HighDefinition.EnviroHDRPFog
- = UnityEngine.Rendering.HighDefinition.EnviroHDRPDistanceBlur

Before Post Process

- = UnityEngine.Rendering.HighDefinition.EnviroHDRPSunShafts
- = UnityEngine.Rendering.HighDefinition.EnviroHDRPMoonShafts

After Post Process

List is Empty

4. Please deactivate or remove any other volumes and directional lights. Lighting in HDRP is more complex to setup. If you see any issues like white objects at night for example, those may arise from other volumes with exposure module, baked reflection probes or Baked Global Illumination in your Unity Lighting settings.



Third Party Support

Activate and deactivate third party support here.

▼ Third Party Support

► Miscellaneous

World Manager API

Add WAPI Support

Vegetation Studio Pro

Vegetation Studio Pro not found in project!

Pegasus

Pegasus support not activated! Please activate if you have Pegasus in your project.

Activate Pegasus Support

Deactivate Pegasus Support

FogVolume 3

FogVolume3 support not activated! Please activate if you have FogVolume3 in your project.

Activate FogVolume Support

Deactivate FogVolume Support

Aura 2

Aura 2 not found in your project.

► Shaders

► Networking

Click on "Activate" and project will recompile with integration component active.

After that you will see a new button to actually add the integration component.

Please note:

Some Integrations will auto detect if third party asset is installed, so you don't need to activate them by hand.

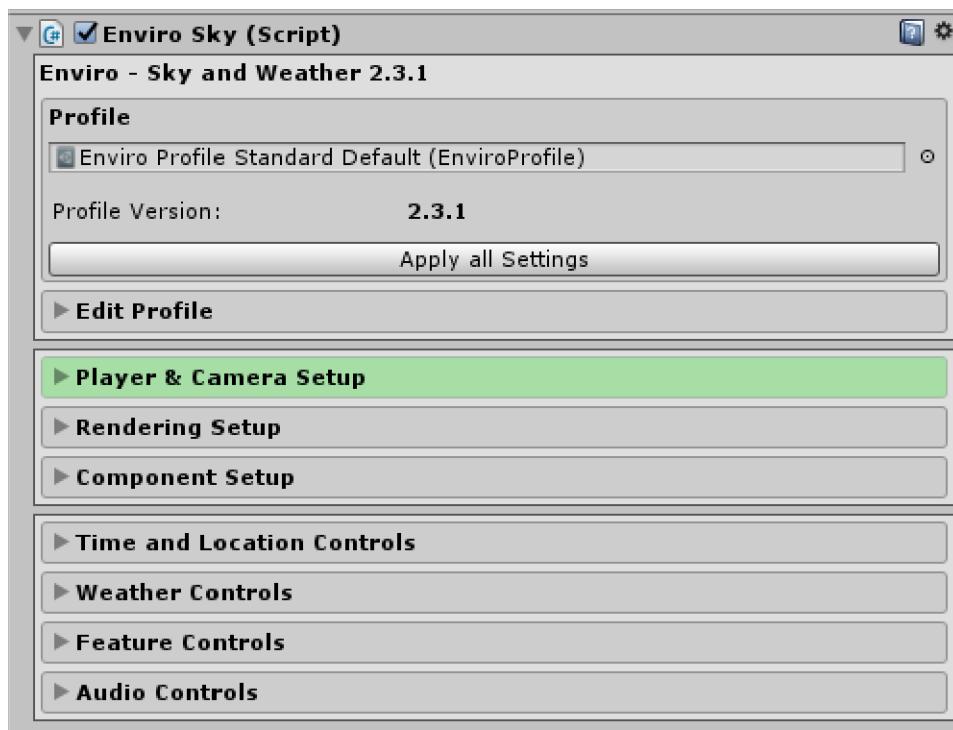
Attention!

If you activate an integration you don't have in your project you will get errors! Click on "Deactivate" to fix these and import the third party asset before you are activating enviro support for it.



Enviro Sky Instances

This is the heart of each enviro sky instance where you can configure visuals, control time and weather or activate and deactivate features.



Edit Profile:

You can assign a profile at the top here and work on that with a click on "Edit Profile". Please check the "Profile" section for more information.

Player and Camera Setup:

Assign your camera and player here. If you already done setup nothing special to do here anymore.

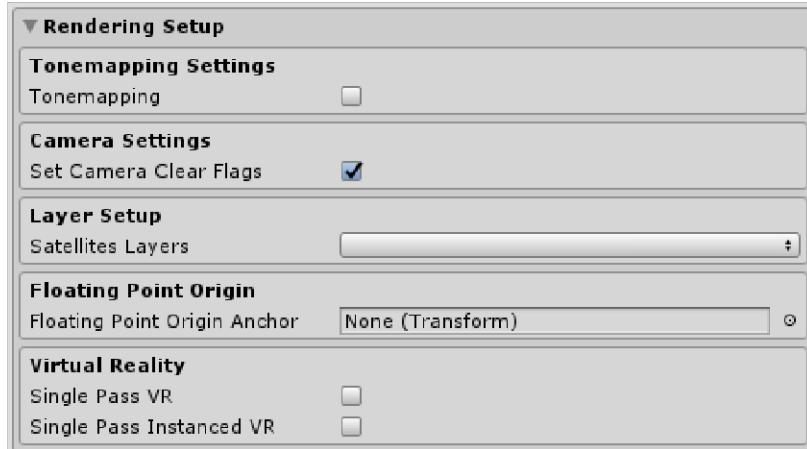
Component Setup:

Just all needed components are referenced here. Normally you don't need to change here anything as everything should be setup already. However if something goes very wrong you can reassign components here.



Rendering Setup

The “Rendering Setup” section includes a few additional setup settings that you may want to change for your projects.



Tonemapping: That option will enable tonemapping for enviro effects. It is highly recommended to not use this option and instead use a post processing tonemapper. Please check the FAQ section for more information.

Set Camera Flags: Disable when you want to set your own camera clear flag. (Not recommended)

Satellites Layers: This layer will only be used if you added additional satellites. (Deactivated by default)

Floating Point Origin: Here you can assign an object with your world offset. Enviro will use that then to render clouds at correct location.

Single Pass VR: If you are working on a VR project and using “Single-Pass Rendering” you have to set this to enabled! Disable if you are not working on VR or using the “Multi-Pass Mode”.



Time and Location

In this section you can control the time progressing, current time of day and date, simulation speed and location based on longitude and latitude.

▼ Time and Location Controls

Time

Progress Time: Simulated

Seconds: 0

Minutes: 0

Hours: Current Time: minutes 12

Days: 1

Years: 2019

Days In Year: 365

Cycle Length In Minutes: 5

Day Length Modifier: 1

Night Length Modifier: 1

Day Night Switch: 0.45

Season

Calc Seasons:

Current Seasons: Winter

Location

Utc Offset: 0

Latitude: 0

Longitude: 0

Progress Time:

- **“Simulated”**: This mode will progress time based on the Day and Night Length in Minutes settings.
- **“One Day”**: Works like “Simulated” but will not progressing days or years.
- **“System Time”**: Uses the user system time and keep them in sync.
- **“None”**: Disables time progressing.

Please note! You have to set the “Progress Time Mode” to “None” if you want to change the time in runtime over inspector sliders! But you still can change time over scripting API without modifying the “Progress Time Mode”.

Seasons:

Seasons will be used by various utility components like vegetation growth or season based material/gameobject swap components. If you enable “Calc Season” the current season will be chosen based on day of year. Please check the Profile -> Season settings to configure season lengths.

Location:

Here you can setup your location based on latitude and longitude and choose your time-zone.



Weather Controls

In this section you can control the current active weather, start weather and quickly edit the active weather preset. You also can disable automatic weather changes for all your zones here (Update Weather option).

The screenshot shows the 'Weather Controls' panel. Under the 'Weather' section, 'Update Weather' is checked and 'Start Weather Preset' is set to 'Cloudy 2 (EnviroWeatherPreset)'. A note says 'Weather can only be changed in runtime!' with a 'Edit current Weather Preset' button. Under the 'Zones' section, 'Current Zone' is set to 'EnviroSky Standard (EnviroZone)'.

Tipps:

- If you enabled "Scene Preview" you can change the preview by assigning different weather presets in "Start Weather Preset". This will allow you to work on your scenes with enviro effects enabled to better showcase how your scene will look in runtime.
- In runtime you also can quickly change the current weather in current zone here!

The screenshot shows the 'Weather Controls' panel with a dropdown menu open for 'Current Weather'. The menu lists several weather presets: Clear Sky, Cloudy 1, Cloudy 2, Cloudy 3, Foggy 1, and Light Rain. 'Clear Sky' is selected, indicated by a blue checkmark. A red arrow points to the 'Clear Sky' option in the dropdown.

- "Edit current Weather Preset" will select the currently playing weather preset for quick edits!



Feature Controls

In "Feature Controls" section you can quickly enable and disable enviro effects like clouds, volumetric lighting and lightshafts.

▼ Feature Controls

Features	
Use Volume Lighting	<input checked="" type="checkbox"/>
Use Volume Clouds	<input checked="" type="checkbox"/>
Use Fog	<input checked="" type="checkbox"/>
Use Flat Clouds	<input type="checkbox"/>
Use Particle Clouds	<input type="checkbox"/>
Use Distance Blur	<input type="checkbox"/>
Use Aurora	<input type="checkbox"/>
Sun Light Shafts	<input type="checkbox"/>
Moon Light Shafts	<input type="checkbox"/>

Scene View	
Show Volume Lighting In Editor	<input checked="" type="checkbox"/>
Show Volume Clouds In Editor	<input checked="" type="checkbox"/>
Show Flat Clouds In Editor	<input checked="" type="checkbox"/>
Show Fog In Editor	<input checked="" type="checkbox"/>
Show Distance Blur In Editor	<input checked="" type="checkbox"/>

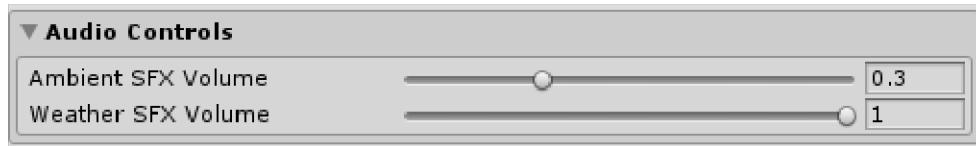
Settings should be self-explaining. But I want to point out the "Scene View Preview".

Enable or disable these to show or hide enviro effects in your scene view while working on your scene. Sometimes you may want to disable these to have better editor performance, or if you don't need to have your scene fogged or clouds in sky.



Audio Controls

In "Audio Controls" section you can set the volume of sound effects used by enviro for ambient and weather.



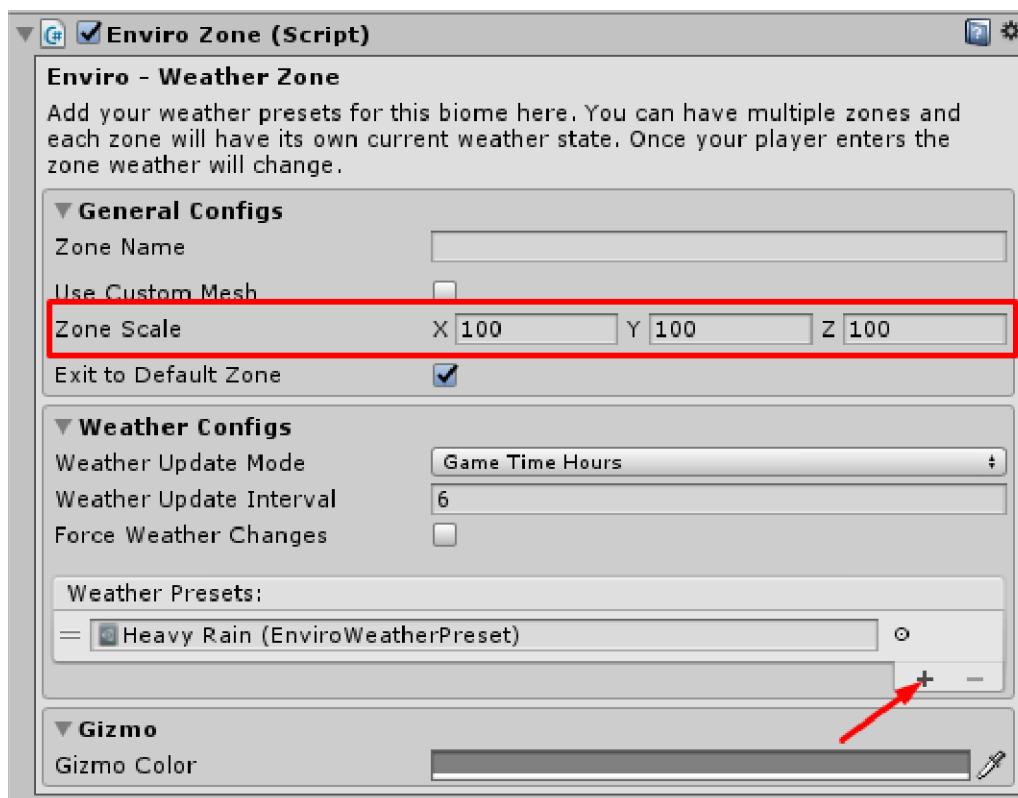
Nothing special here, but you may want to globally set the volume of enviro ambient and weather sfx for your project here.



Enviro Zone Component

The “Enviro Zone” component handles your weather presets and initiate the weather changing. There always is one zone added to the “EnviroSky” object. That one is your default zone and will be used whenever your player/camera is in no other manual added zones. “Manual added zones”? Yes, you can add as many zones as you want to your game world, each with their own weather list and current active weather! Once your player/camera enters an additional zone the weather will smoothly change to the current active weather in that zone. Use this to have multiple biomes in your game.

- To create a new zone create an empty GameObject (Right-click in hierarchy -> “Create Empty”) and add the “Enviro Zone” component to It (“Components” -> “Enviro” -> “Weather Zone”).
- Now just set the scale and add your weather presets. That’s all!



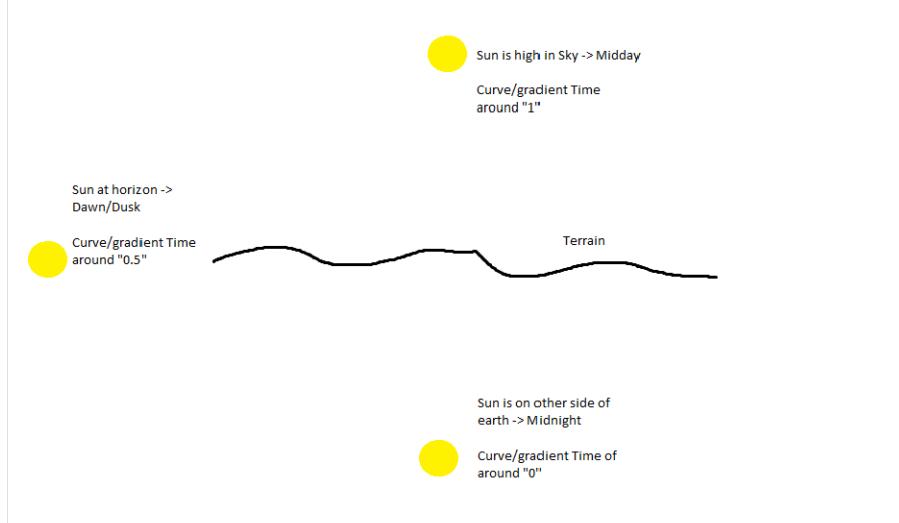


FAQ and Troubleshoot

Short answers on frequently asked questions and issues that may happen.

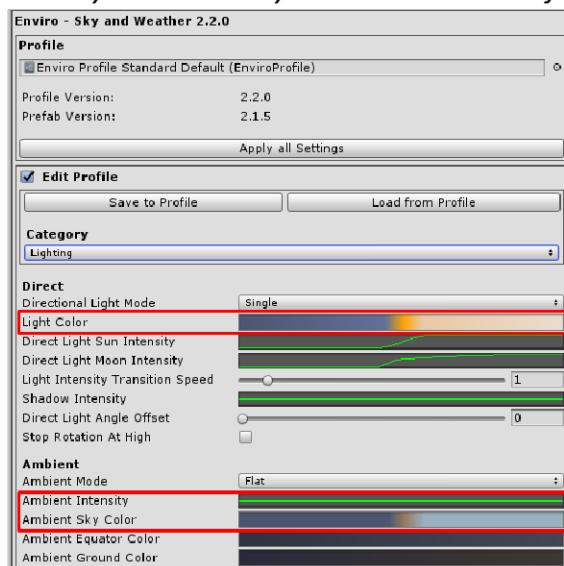
- **How to tweak enviro curves and gradients?**

Most curves and gradients are evaluated based on sun altitude in sky.
It ranges from 0 -> midnight, ~0.5 -> dawn/dusk, 1 -> midday.



- **How to make nights brighter or darker? (scene lighting)**

Select your Enviro Sky Instance -> Edit Profile -> Lighting category:

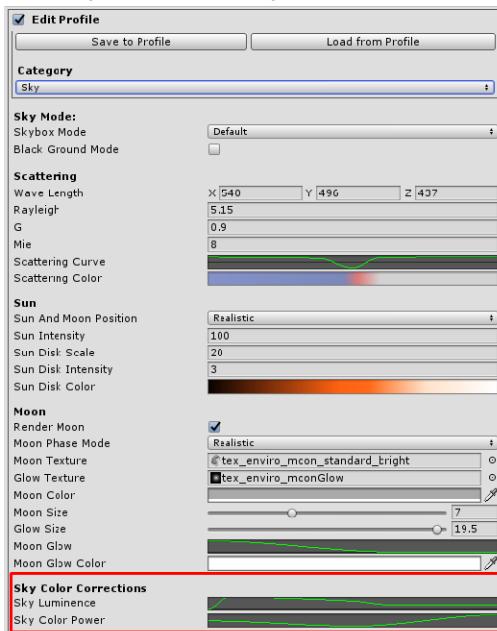


Set left half of gradients and curves marked in screenshot darker/lower or brighter/higher.



- **How to make nights brighter or darker? (Sky)**

Select your Enviro Sky Instance -> Edit Profile -> Sky category:



Tweak left half of marked curves. Higher values in "Sky Luminance" will make sky brighter. Higher values in "Sky Color Power" will make sky darker while colors stronger.

- **Tonemapping**

In newly created instances Enviro will use some simple tonemapping to limit color brightness. But for some post effects to work correctly you should disable the "**tonemapping**" option in "**Enviro Instance**" -> "**Rendering Setup**" and setup a tonemapping post processing effect. This will give you best results and HDR compatibility. However you **need** to use some tonemapping to get best results. For example using the Unity Post Processing -> Color Grading tonemapping.

So download and import Unity Post Processing through the Unity Package Manager and setup in your scenes.

<https://docs.unity3d.com/Packages/com.unity.postprocessing@2.1/manual/Quick-start.html>

Now in your post processing volume profile, add the Color Grading module and activate Tonemapping here. Personally I use the "ACES" mode here.





- ***Scene renders black in combination with Unity Post Processing (Unity 2019).***

*Please take a look in your Post Processing Layer component on your camera. Make sure that “**Directly To Camera Target**” option is **disabled**. That option will break legacy image effects that using the “OnRenderImage” function.*



Scripting API

Usefull functions and api calls to communicate with enviro in your own scripts.

General

Assign your Camera and Player and start Enviro systems:

```
EnviroSkyMgr.instance.AssignAndStart (GameObject player, Camera Camera);
```

Start Enviro in headless server mode:

```
EnviroSkyMgr.instance.StartAsServer();
```

Change camera and player in runtime:

```
EnviroSkyMgr.instance.ChangeFocus (GameObject player, Camera Camera);
```

Activate or deactivate features:

```
EnviroSkyMgr.instance.useVolumeLighting = true;
```

```
EnviroSkyMgr.instance.useVolumeClouds = true;
```

```
EnviroSkyMgr.instance.useFlatClouds = true;
```

```
EnviroSkyMgr.instance.useParticleClouds = true;
```

```
EnviroSkyMgr.instance.useSunShafts = true;
```

```
EnviroSkyMgr.instance.useMoonShafts = true;
```

```
EnviroSkyMgr.instance.useDistanceBlur = true;
```

Change clouds quality:

```
EnviroSky.instance.ApplyVolumeCloudsQualityPreset(EnviroVolumeCloudsQuality  
qualityPreset);
```



Time and Date

Get current Time:

```
int currentSecond = EnviroSkyMgr.instance.Time.Seconds;  
int currentMinute = EnviroSkyMgr.instance.Time.Minutes;  
int currentHour = EnviroSkyMgr.instance.Time.Hours;  
int currentDay = EnviroSkyMgr.instance.Time.Days;  
int currentMonth = EnviroSkyMgr.instance.GetCurrentMonth();  
int currentYear = EnviroSkyMgr.instance.Time.Years;  
float timeOfDay = EnviroSkyMgr.instance.GetTimeOfDay();
```

Get current sun and moon "time" (0-1). Usefull to use in curves and gradient to evaluate values:

```
float solarTime = EnviroSkyMgr.instance.Time.solarTime;  
float lunarTime = EnviroSkyMgr.instance.Time.lunarTime;
```

Get a time string to be used in your UI:

```
string timeString = EnviroSkyMgr.instance.GetTimeString();  
string timeStringWithSeconds = EnviroSkyMgr.instance.GetTimeStringWithSeconds();
```

Set time of enviro:

```
EnviroSkyMgr.instance.SetTimeOfDay(float tod);  
EnviroSkyMgr.instance.SetTime(int year,int day,int hour,int minute,int second);  
EnviroSkyMgr.instance.SetTime(System.DateTime dateTime);
```

Set time progress mode of enviro:

```
EnviroSkyMgr.instance.Time.ProgressTime = EnviroTime.TimeProgressMode.None;
```



Seasons

Season enum:

`EnviroSeasons.Seasons.Spring`

`EnviroSeasons.Seasons.Summer`

`EnviroSeasons.Seasons.Autumn`

`EnviroSeasons.Seasons.Winter`

Activate/deactivate auto season changes:

`EnviroSkyMgr.instance.Seasons.calcSeasons = false;`

Get current season:

`EnviroSeasons.Seasons season = EnviroSkyMgr.instance.Seasons.currentSeasons;`

Set current season:

`EnviroSkyMgr.instance.ChangeSeason(EnviroSeasons.Seasons.Spring);`



Get current active weather:

```
EnviroWeatherPreset weather =  
EnviroSkyMgr.instance.Weather.currentActiveWeatherPreset;
```

Get a list of all available weather presets:

```
List<EnviroWeatherPreset> presets = EnviroSkyMgr.instance.Weather.weatherPresets;
```

Get current active weather zone:

```
EnviroZone zone = EnviroSkyMgr.instance.Weather.currentActiveZone;
```

Get snow and wetness intensity:

```
float currentWetness = EnviroSkyMgr.instance.Weather.curWetness;  
float currentSnow = EnviroSkyMgr.instance.Weather.curSnowStrength;
```

Set current active weather with smooth transition:

```
EnviroSkyMgr.instance.ChangeWeather(int weatherID);  
EnviroSkyMgr.instance.ChangeWeather(EnviroWeatherPreset weatherPreset);
```

Set current active weather without transition:

```
EnviroSkyMgr.instance.ChangeWeatherInstant(int id);  
EnviroSkyMgr.instance.ChangeWeatherInstant(EnviroWeatherPreset weatherPreset);
```



Events

```
EnviroSkyMgr.instance.OnWeatherChanged += (EnviroWeatherPreset type) =>
```

```
{
```

```
    Debug.Log("Weather changed to: " + type.Name);
```

```
};
```

```
EnviroSkyMgr.instance.OnSeasonChanged += (EnviroSeasons.Seasons season) =>
```

```
{
```

```
    Debug.Log("Season changed");
```

```
};
```

```
EnviroSkyMgr.instance.OnHourPassed += () =>
```

```
{
```

```
    Debug.Log("Hour Passed!");
```

```
};
```

```
EnviroSkyMgr.instance.OnDayPassed += () =>
```

```
{
```

```
    Debug.Log("New Day!");
```

```
};
```

```
EnviroSkyMgr.instance.OnYearPassed += () =>
```

```
{
```

```
    Debug.Log("New Year!");
```

```
};
```

```
EnviroSkyMgr.instance.OnDay += () =>
```

```
{
```

```
    Debug.Log("Day!");
```

```
};
```

```
EnviroSkyMgr.instance.OnNight += () =>
```

```
{
```

```
    Debug.Log("Night!");
```

```
};
```