

SETTING UP VEGETATION STUDIO PRO

This document will give you a quick guide to setting up Vegetation Studio Pro and biomes in a new project. It uses the new job system and burst compiler and requires some additonal setup.

SETTING UP UNITY

The Vegetation Studio Professional beta has a few setup requirements.

The minimum requirement is Unity 2018.2.11 This will likely increase with time as Unity adds a bit more of the NativeArray/job functionality.

Set up a new project in Unity.

Go to Player settings and change the following settings.

- Scripting Runtime Version to .Net 4.x Equivalent
- Api compability level to .net 4.x

Configuration		
Scripting Runtime Version*	NET 4.x Equivalent	
Scripting Backend	Mono	
Api Compatibility Level*	.NET 4.x	
Disable HW Statistics*		
Scripting Define Symbols*		
UNITY_POST_PROCESSING	_STACK_V2;VEGETATION_STUDIO_PRO	
Allow 'unsafe' Code	\checkmark	
Active Input Handling*	Input Manager	

Then open the Package Manager from the window menu. You need to enable show preview packages to see them all.



Packages	
In Project	All
▼ Packages	
Ads	2.0.8
Analytics Library	2.0.16
Burst	0.2.4-preview.25
Collections	0.0.9-preview.4
In App Purchasing	2.0.3
Jobs	0.0.7-preview.3
Mathematics	0.0.12-preview.13
Package Manager	UI 1.9.11
Post-processing	2.0.11-preview
TextMesh Pro	1.2.4
▶ Built In Package	s

In Unity 2018.3 + the window changed a bit and you need to turn on preview packages to see all of them

All packages + Advanced + 0 Search by each as non-verified, preview or version number Advertisement 2.3.1 Advanced + 0 Search by each as non-verified, preview or version number Analytics Library 3.2.2 Asset Bundle Browser 1.7.0 Version 2.3.1 (2018.3 verified) Asset Bundle Browser 1.7.0 View documentation - View licenses verified) Cinemachine 2.2.8 View documentation - View licenses vor.unity.ads Oculus (Android) 1.29.0 Nity Ads is a video ad network for iOS and Android that allows you to quickly and effectively meas. OpenVR 1.0.2 ProBuilder 3.0.9 Yeindows Mixed Reality 1.0.7	All packages Advertisement 2.3.1 Advertisement 2.3.1 Analytics Library 3.2.2 Asset Bundle Browser 1.7.0 Version 2.3.1 2018.3 verified View documentation - View licenses com.unity.ads Author: Unity Technologies Inc. Unity Ads is a video ad network for iOS and Android that allows you to quickly and effectively more games. OpenVR 1.0.2 ProBuilder 3.0.3 Verxified 2.0.3 Viny Collaborate 1.2.15				
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Select and install 5 packages

- Mathemathics
- Jobs
- Collections
- Burst
- Postprocessing

Install the latest version of each package.

IMPORTANT: SOME 2018.2.X USERS HAVE REPORTED AN ERROR WHEN INSTALLING THE

LATEST MATHEMATICS PACKAGE. INSTALLING MATHEMATICS 0.0.12-PREVIEW 21 OR

EARLIER SEEMS TO HAVE FIXED THIS. I EXPECT UNITY TO UPDATE A PACKAGE WITH A FIX

SOON.

THERE IS ALSO A PROBLEM WITH THE LATEST BURST PACKAGES TRY TO STAY AT BURST

1.0.0-PREVIEW.6 OR EARLIER UNTIL UNITY COMES OUT WITH A FIX.

These packages are needed to get Vegetation Studio running with the burst compiler and job system.

if you have the Post Processing stack installed direct from GIT or another source you need to uninstall this and use the version from the package manager.

When done import the Vegetation Studio Pro beta package.





For better speed in the editor turn of the Jobs debuger and Leak Detection.

To use the burst compiler in standalone builds you need to make sure to install **Windows SDK** and **VC++ toolkit** from Visual Studio Installer

Install the latest available version of each.





Workloads	Individual components	Language packs	Installation locations	
Runtime f	for components based on Node.js v	6.4.0 (x86)		Summary
Runtime f	for components based on Node.js v	7.4.0 (x86)		> Visual Studio core editor
Runtime s	support for R development tools			> Game development with Unity
VC++ 201	15.3 v14.00 (v140) toolset for deskto	op		Individual components *
VC++ 201	17 version 15.4 v14.11 toolset			 Static analysis tools Windows 10 SDK (10.0.17134.0)
	17 version 15.5 v14.12 toolset			VC++ 2017 version 15.7 v14.14 latest v141 tools
	17 version 15.6 v14.13 toolset			 .NET Framework 4.6.1 targeting pack
	17 version 15.7 v14.14 latest v141 to			 ✓ .NET Framework 4.6 targeting pack ✓ .NET Framework 4.7.1 targeting pack
	17 version 15.7 v14.14 Libs for Spec	. ,		
	17 version 15.7 v14.14 Libs for Spec			
	17 version 15.7 v14.14 Libs for Spec	tre (x86 and x64)		
	+ 2017 Redistributable Update			
	+ compilers and libraries for ARM			
	+ compilers and libraries for ARM6	4		
	+ runtime for UWP + tools for CMake			
	+ tools for CMake Universal CRT SDK			
	XP support for C++			
Debugging and t	testing			
ocation	x86)\Microsoft Visual Studio\2017\0	Community Change		
:\Program Files ()				

UPGRADING FROM STANDARD VEGETATION STUDIO

Vegetation Studio and Vegetation Studio Pro can not be in the same project. Remove the Vegetation Studio folders before importing. Also go to player settings and remove the VEGETATION_STUDIO compiler define.

You need to set up again and create a new vegetation package.

ADDING VEGETATION STUDIO PROFESSIONAL TO A SCENE.

After installing the Vegetation Studio Pro beta package you can add Vegetation Studio Pro to the scene using the "Add vegetation Studio Pro to scene" menu.





This will add the required component to the scene. The VegetationSystemPro object is what you will



If you add the terrain to the scene after adding VS Pro you need to manually add the terrain.

Find the Terrain and add the UnityTerrain component.





Next on the terrains tab on the Vegetation System pro component you drag and drop the terrains. You can add multiple terrains here.

Settings	Cameras	Terrains				
Vegetation Biomes Edit Biomes						
Environment Render Texture Masks						
Debug						
Add terrains	Add terrains					
You can add any terrain implementing the IV egetationStudioTerrain interface. On standard terrains add the UnityTerrain component and then drag/drop the terrain GameObject here.						
Add terrain	🗊None (Game Object)	0				
Add all Unity terrains Add all Mesh terrains Add all Raycast terrains						
Current terrains						
Unity terrain:	🗊 Terrain	0				
Area						
This sets the total area for Vegetation Studio. On automatic it joins the area of all added terrains. For streaming terrain setups configure your total world area manually.						
Automatic calculation 🔽						
Recalculate						
Total area						
	ter X 250 Y 0					
	nt X 250 Y 0.00					

The world area will be calculated automatic from all added terrains. For setups where you load



terrain run-time you uncheck automatic calculation and define the total world area.

Next we create vegetation packages/biomes. These are scriptable objects that hold all the rules for vegetation spawning. For this example we will create 2 biomes. a default biome and a forest.







If you are going to use biomes together and create splat map rules it is important that all biomes are set up with the same number of textures.

Each biome can have its own splat map generation rules and use any subset of the total textures. This way one biome can use textures 1-5 while the other uses 4-8. There is no problem for the biomes to use the same textures. When the splatmap is generated the rules will be used inside the biome mask area.





Next you add the biomes to the biomes tab of the Vegetation System and name them. Here i set my "default" biome as default and the other as a forest biome. This biome type will also be set on the BiomeAreaMasks we create later.



 Vegetation System Pro A.W.E.S.O.M.E Vegetation System Pro 	(script) tation St Profes	udio sional		
Settings	Cameras	Terrains		
Vegetation	Biomes	Edit Biomes		
Environment	Render	Texture Masks		
Debug				
Add Vegetation package				
You can add multiple vegeta biome system. Add Vegetation package	tion packages. Each can be assig			
Remove biome				
Vegetation package	Default (VegetationPac			
Select biome	Default			
Biome name	No name			
Remove biome				
Vegetation package	Forest (VegetationPack	agePro) O		
	Temperate Deciduous Fores			
Biome name	No name			
Biome sort order	•			
An higher sort order will apply	r the biome on top of others. Defai	ult biome is always on bottom.		

When added you can select what biome to edit on the edit biome tab. This process is similar to normal Vegetation Studio





SETTING UP A BIOME MASK AREA

The default biome will be used everywhere where there is no BiomeMaskAreas. Add the BiomeMaskArea to a component and edit the nodes to select the area you want. There is also a pre made prefab you can drop in the scene.

For each biome mask area you select what biome should be in the mask area. If the Vegetation System has a biome/vegetation package of the same type it will be spawned within the mask.









SPLATMAP RULES

There is a TerrainSystem component on the same GameObject as the VegetationSystem component. This is used to set up splatmap rules for the added biomes. Select the biome you want to edit. Then enable the Use with splat map generation setting on the textures you want to use with this biome. You then set the distribution curves for height and steepness. There is also noise and weight settings.

Press the generate button to generate the splatmap for all terrains added to the vegetation system.



