

**JU**

Foot Placement



DEVELOPED BY
JULHIECIO GAMEDEV

The JU Foot Placement is an Advanced IK system that adapts a humanoid character's foot to the position and rotation of the surface he is stepping on, supports all types of animation using dynamic foot placement or using animation curves.

Version: 2.1

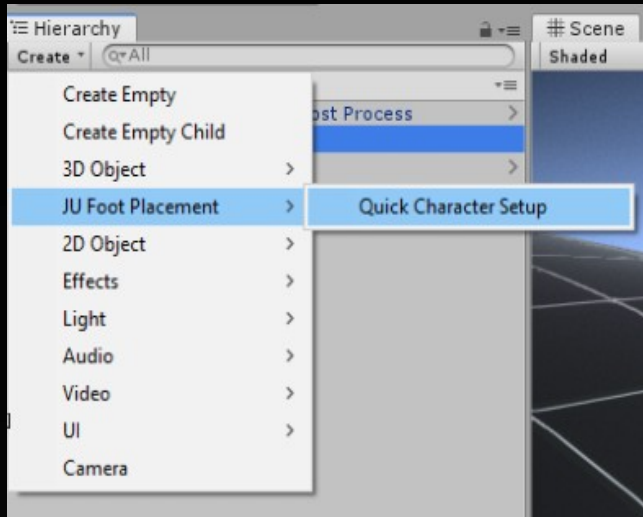
Oldest teste compatible Unity version: Unity 2018.X

Email for support and questions: JULHIECIOGAMES1@GMAIL.COM

See my Youtube Channel: <http://www.youtube.com/c/JulhiecioGameDev>

HOW TO USE

To use it, with your selected character in the scene, just click on Create > Quick Character Setup.

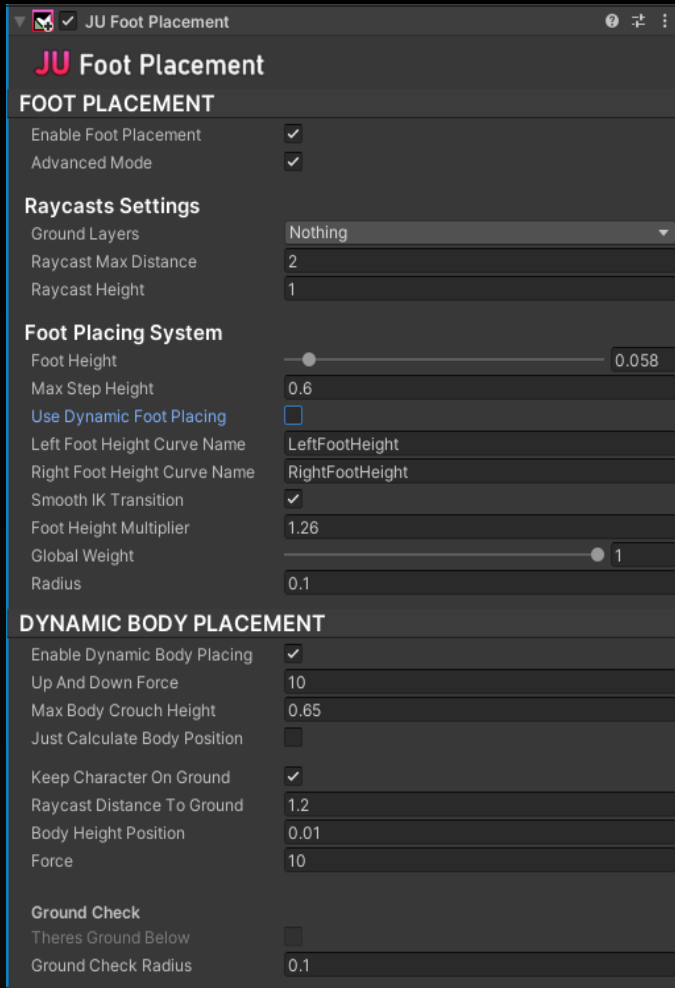


And a quick setup will be done with a standard JU Foot Placement character controller.

If you only want the JU Foot Placement, just drag and drop on your character.

HOW TO SETUP JU FOOT PLACEMENT

The JU Foot Placement already comes with a standard configuration that will fit most characters, however if it didn't work correctly on yours (due to scales etc.) or you just want to change the speed of going up and down for example, activate the advanced mode and let's go:



Foot Placement

Enable Foot Placement - Activates the foot IK

Advanced Mode - Shows all advanced variables in case you need to change any default values.

Raycast Settings

Ground Layers - All floor layers that you want Foot Placement to occur.

Raycast Max Distance - is the distance from the raycast that detects the ground.

Raycast Height - is the height from which the ray is launched.

Foot Placing System

Foot Height - it is the adjustment of the position of the foot, it is normal for the foot to be slightly below the ground, so use this to adjust it.

Max Step Height - Heights above this float will be ignored by the JU Foot Placement.

Use Dynamic Foot Placement - If enabled, the foot distance from the floor will be based on your animation, without having to use any animation curves.

Left Foot Height Curve Name (Only works with Dynamic Foot Placement turned off.) - is the name of the curve present in the Animator Controller as a parameter and in the animations that control the Animator value. This curve is to set the height of the foot by IK of each animation.

Right Foot Height Curve Name (Only works with Dynamic Foot Placement turned off.) - is the name of the curve present in the Animator Controller as a parameter and in the animations that control the Animator value. This curve is to set the height of the foot by IK of each animation.

Smooth IK Transition - This boolean transitions from IK and FK.

Foot Height Multiplier - If you are using Dynamic Foot Placement, this will multiply the distance of your foot from the floor.

Global Weight - It is the global weight of the inverse kinematics.

Radius - It is the SphereCast radius at the position of each foot.

Dynamic Body Placement

Enable Dynamic Body Placement – controls the height of the body in relation to the ground and the position of the feet.

Up and Down Force – Body position change speed.

Max Body Crouch Height – Distance limit character can crouch.

Just Calculate Body Position – When checked, the calculation of the body position is done, however it does not affect the transform position.

Keep Character on Ground – is used to fix the character's body on the floor (Transform).

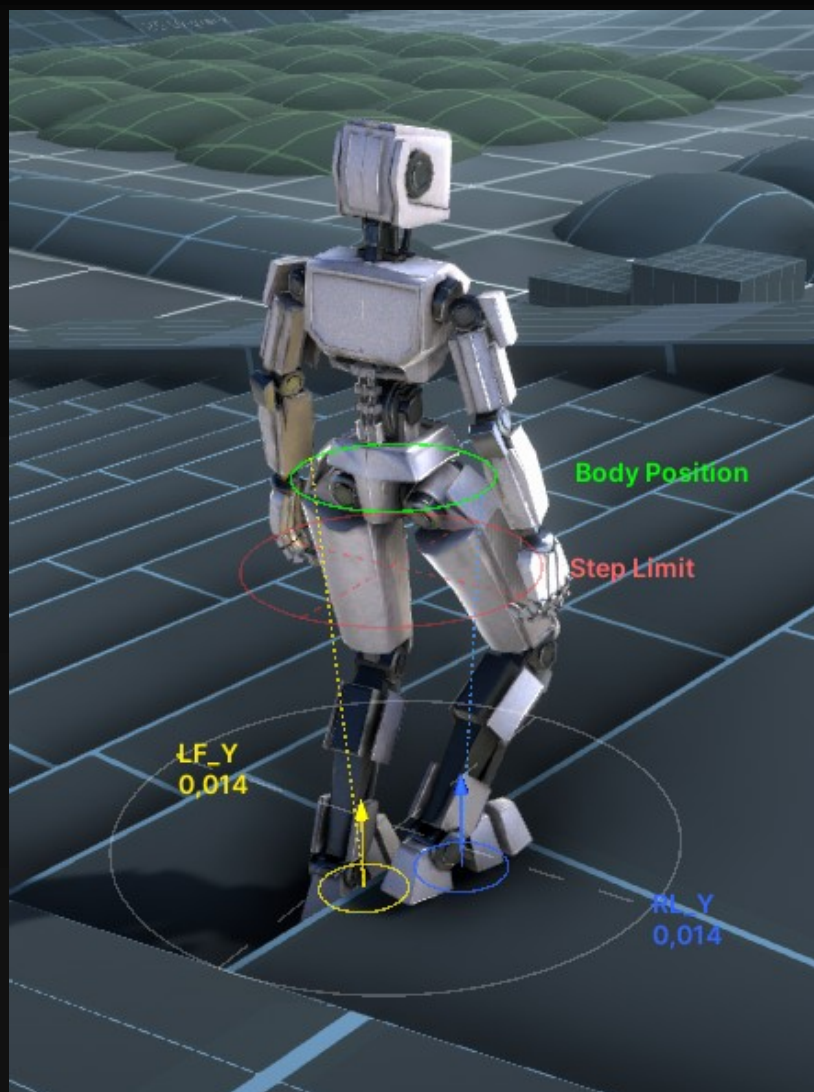
Raycast Distance To Ground – it is the height from where the ray that detects the ground is launched, make sure it is in the middle of your character's body so as not to cause conflicts colliding with the collider itself.

Body Height Position – is the height of the character's body in relation to the ground.

Ground Check

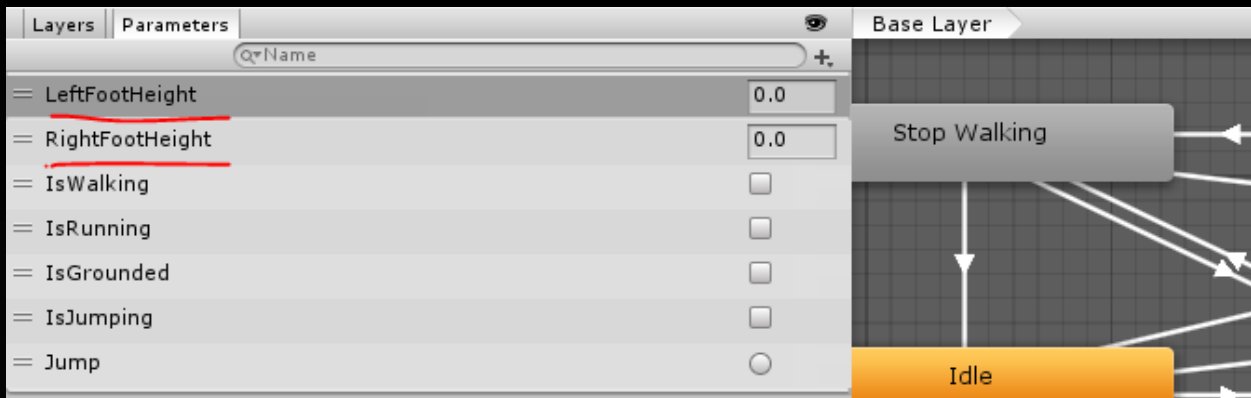
Theres Ground Below = This variable only checks if there is a floor below the character

Ground Check Radius = It is the SphereCast radius that checks the ground.

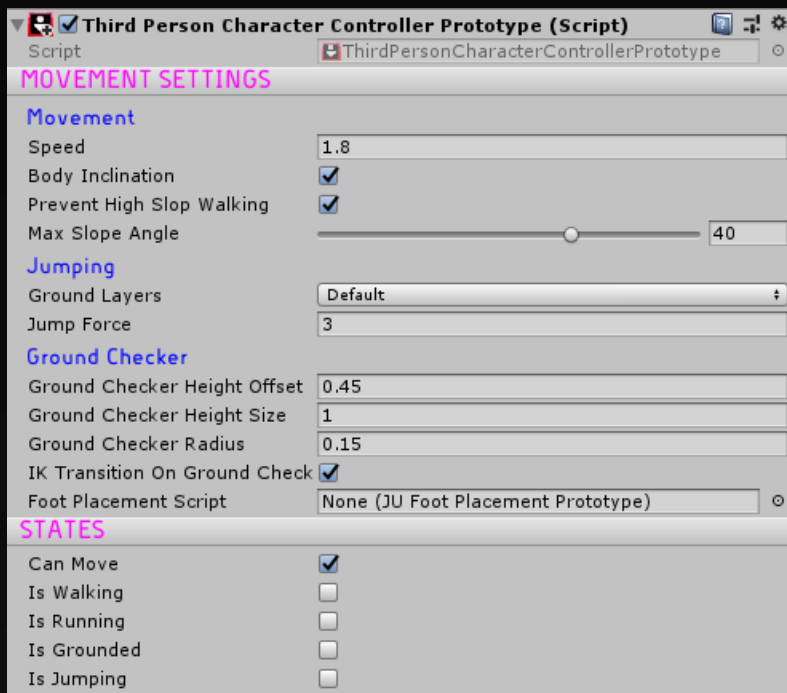


ANIMATOR

This Animator Controller comes with pre-configured animations and curve parameters in case you want to use animation curves..



The IsWalking, IsRunning, IsGrounded, IsJumping and Jump parameters are controlled by the “Third Person Character Controller” component, it does all the character control and controls some parameters of the JU Foot Placement Component, if you want to integrate it with your own control, you can see the code of the Third Person Character Controller.cs and see how the actions are done with the JU Foot Placement (how to make a jump for example), the code is fully commented and easy to read.



HOW TO CREATE A JUMP

JU Foot Placement can pin your character's body to the ground, causing the jump to not perform as expected.

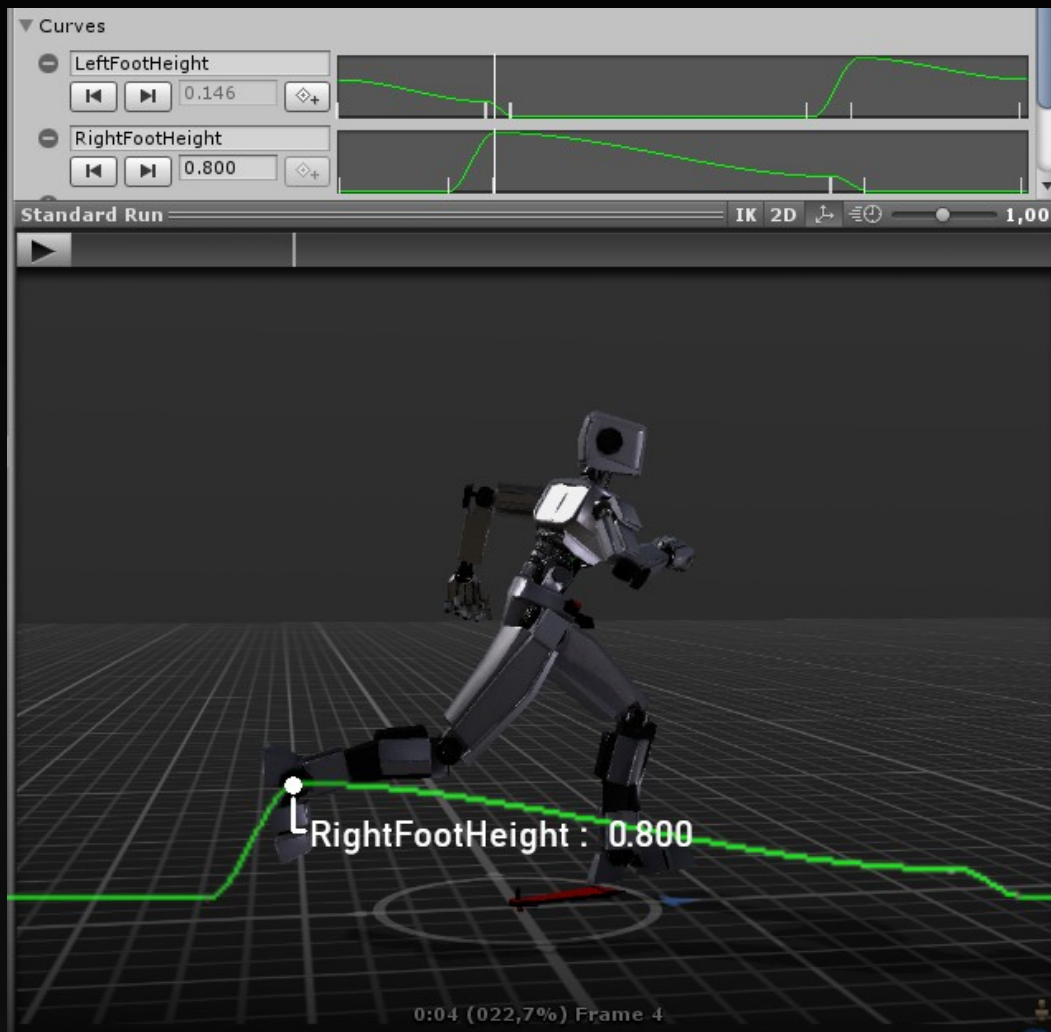
In that case, you can simply disable or enable IK and body placement according to your controller's ground check. For example:

```
//Enable / Disable character's ground fixer  
FootPlacementScript.EnableDynamicBodyPlacing = IsGrounded;  
  
//Enable / Disable foot placement smoothly  
FootPlacementScript.SmoothIKTransition = IsGrounded;
```

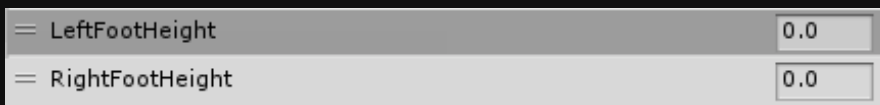

HOW TO USE WITH ANIMATION CURVES

Note: Use is only recommended if you want to have foot height control in each animation, otherwise the use of animation curves is not necessary, JU Foot Placement already calculates your character's foot height in real time according to the current animation. Creating animation curves is **very annoying**.

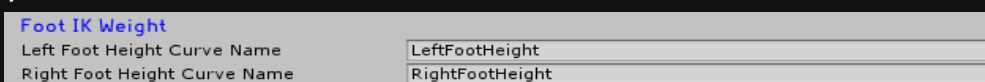
For each animation in which you want to use foot placement with animation curves, you will need to create two curves, one for each foot, with the names LeftFootHeight and RightFootHeight.



In your Animator you will need to create two parameters of type Float with the same names of the curves.



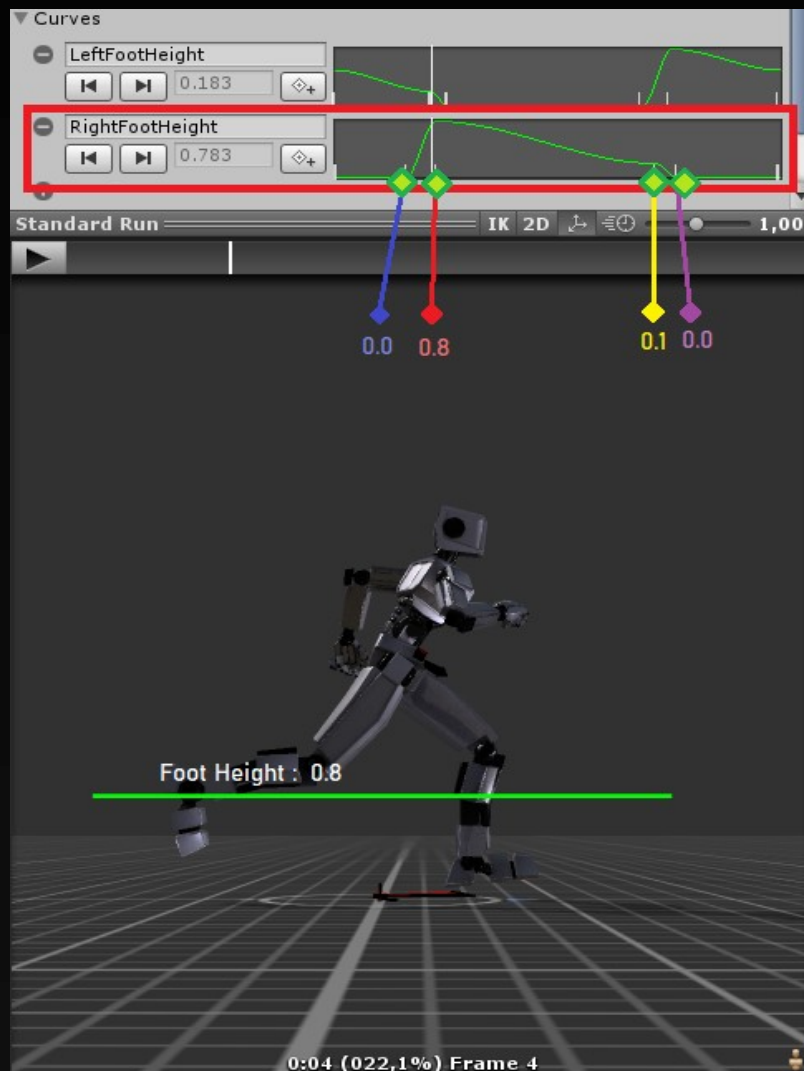
And in the JU Foot Placement component, it must have the same names as the parameters and the curves.



Note: the Floats in the Animator and the animation curves must be written exactly the same, otherwise it will not work.

CREATING GOOD CURVES:

You need to create the points and adjust them to make a curve to follow the height of the feet. When the character's foot is lifting, you must create four points, the **first point** is 0 at Y, and the **second point** that will be the peak of your foot height increases to 0.4 for walking animations and 0.8 for walking animations. run (Adjust this value until it is satisfactory), the **third point** will decrease according to the height of the foot, and use the **last point** to end the step, its value will be 0, adjust your value in X so that you have a satisfactory transition.



OBS: When the curve ends as in the left foot curve of the image above, try to take the value of the last point and put it in the first point of the animation to continue the loop, and try to create a curve similar to another curve only at different times or inverted.



JU Foot Placement

And that's it, I hope you liked Asset.
If you have a suggestion or question, be sure to send
me in my support email: julhieciogames1@gmail.com