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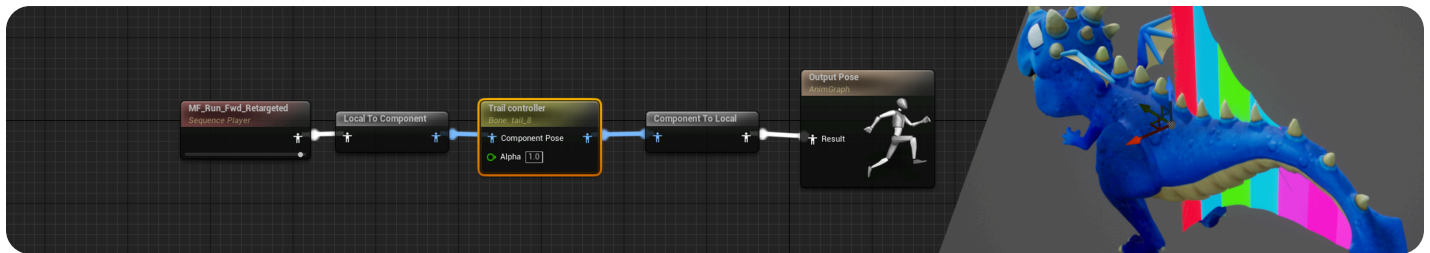
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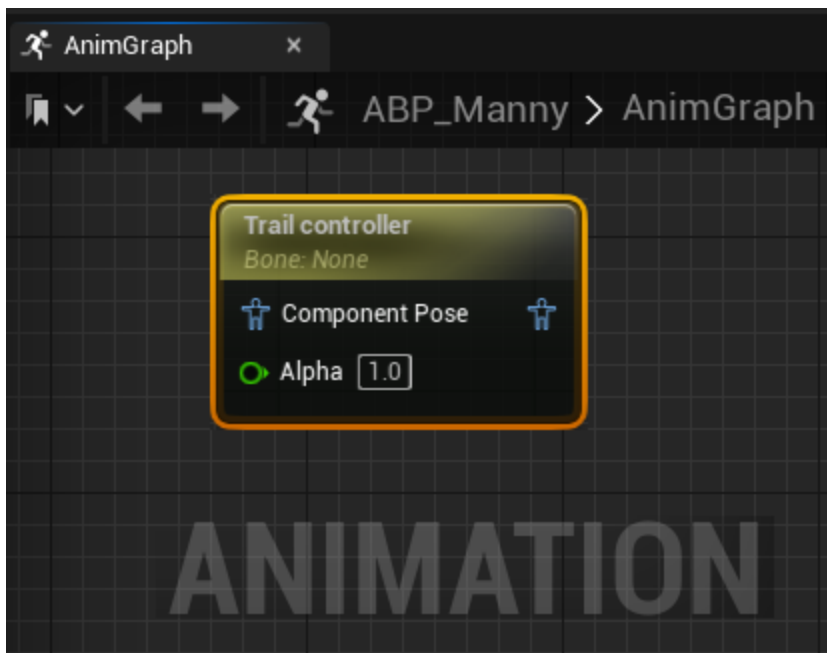
/ Trail Controller

Trail Controller

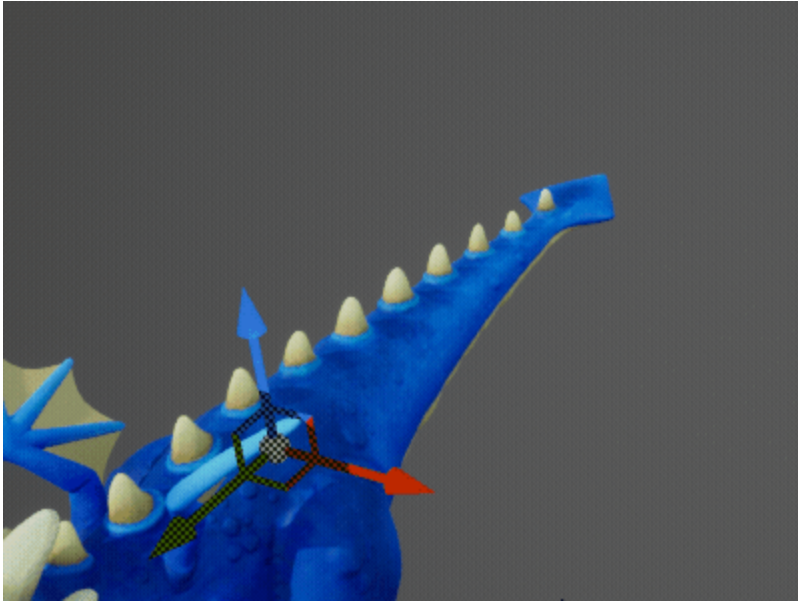
Describes how the Trail Controller node can be used affect a chain of bones.



Using the **Trail Controller** [Animation Blueprint](#) node, you can define a chain of bones to animate based on a delayed replication parent bone motion.

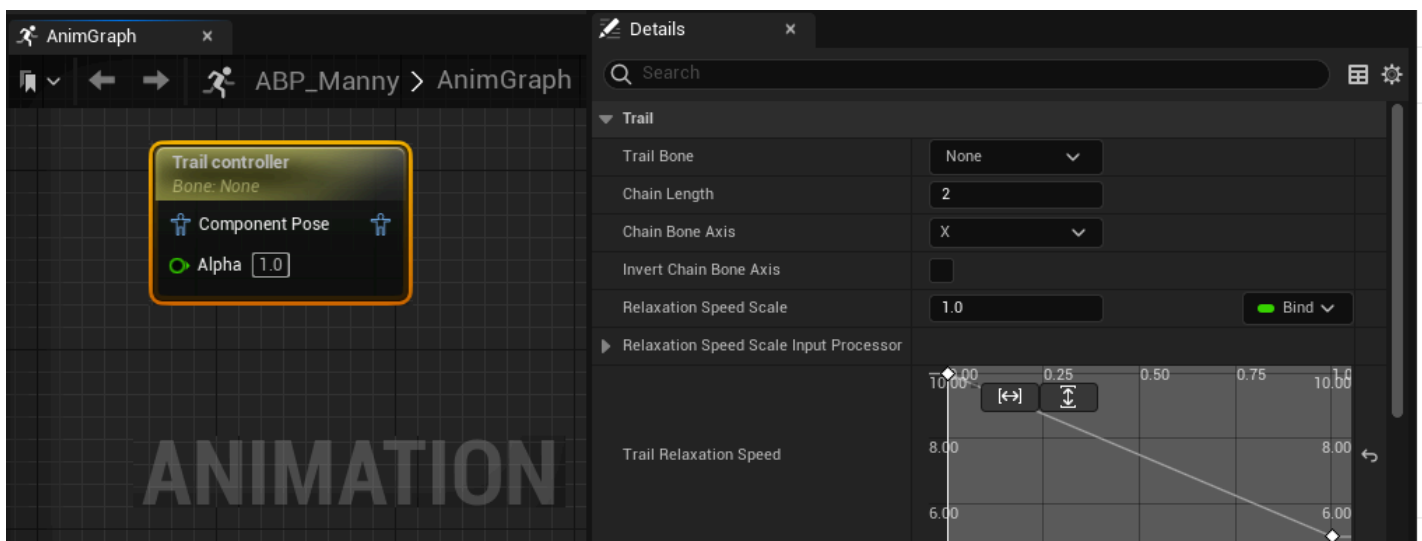


You can use the Trail Controller node to create more realistic trailing motion on your character's auxiliary boned objects, such as tails, capes or accessories.




By defining a bone as the **Trail Bone**, you can select how many bones up the chain from the **Trail Bone** that will be influenced by the Trail Controller node. You can then set constraints on **Stretch**, **Rotation** and even **Planer Limits** on transforms.

Property Reference

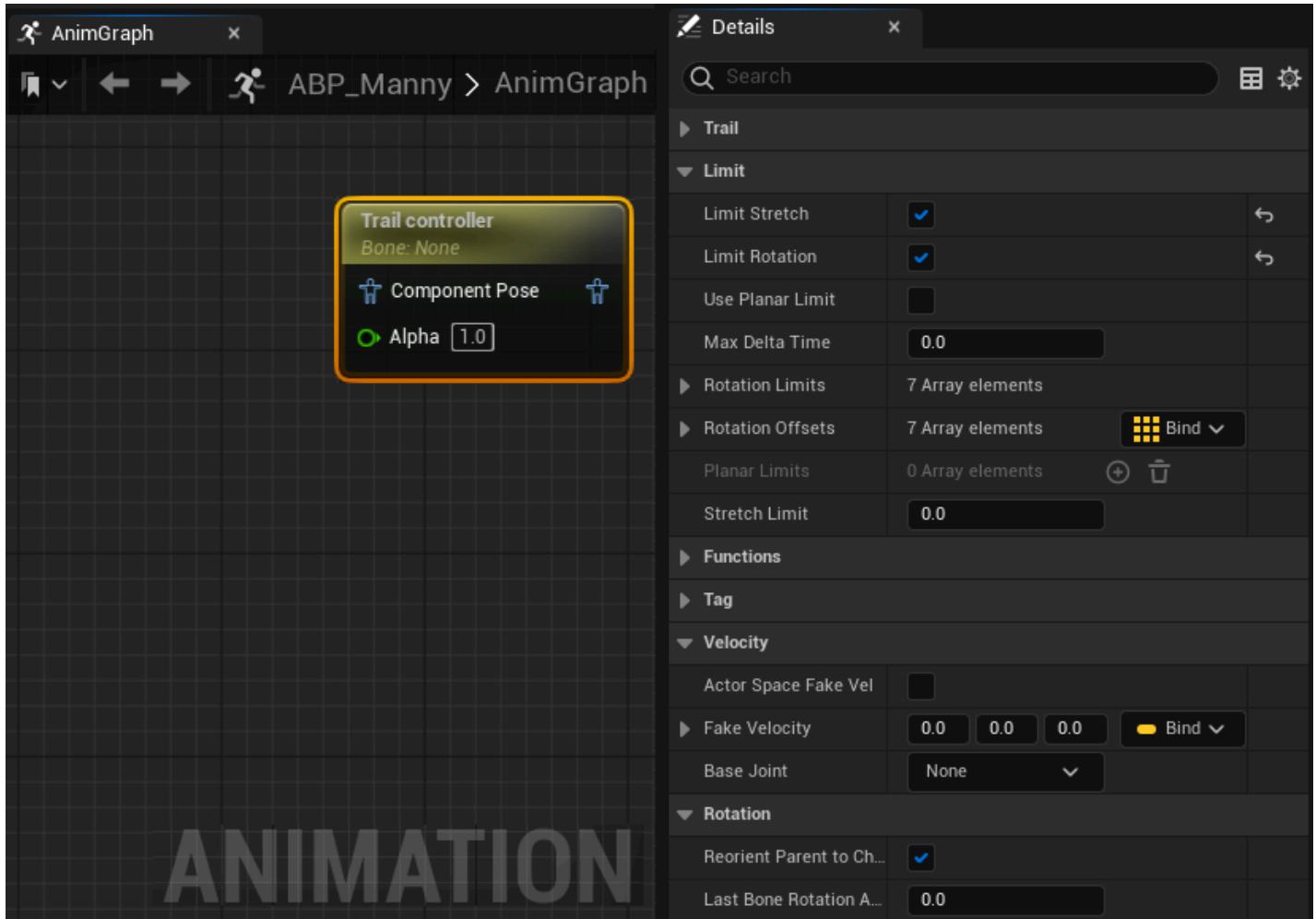


Here you can reference a list of the Trail Controller node's Trail properties.

Property	Description
Trail Bone	Set the bone at the end of a chain structure to trail the parent bone motion.
Chain Length	Set the number of bones to influence up the chain from the Trail Bone.
Chain Bone Axis	Set the axis (X , Y , or Z) to orient the chain points to one another.
Invert Chain Bone Axis	Set a scale alpha to apply the Relation Speed Scale Input Processor properties. A value of 0 will disable the effect, while a value of 1 will fully enable the effect. Values greater than 1 will act as a multiplier.
Trail Relaxation Speed	<p>Here you can use the Trail relaxation speed graph to set a curve to define the behavior at which the transform returns to the animated pose.</p>  <p>Using the graph editor in the property's settings, you can edit the beginning and ending point of the graph to control how the behavior of the chains return to the animated pose. Or right click the graph to add a new point on the graph to manipulate the curves position.</p> <p>The graph's X-axis is ranged from 0 to 1, and it is mapped to the chain of joints. 0 represents the last joint in the chain and 1 represents the closest joint to the Trail Bone.</p> <p>The graph's Y-axis controls the rate at which the delayed motion is passed to the next joint in the chain. Values less than or equal to 0 will prevent joints from continuing to pass the delayed motion. Higher values will pass the delayed motion on quicker. The Y-axis operates as an absolute value to prevent frame dependency. The</p>

Property	Description
	default range is from 5 to 10 resulting in a faster return from the root joint to the bottom joint.

Limit Properties



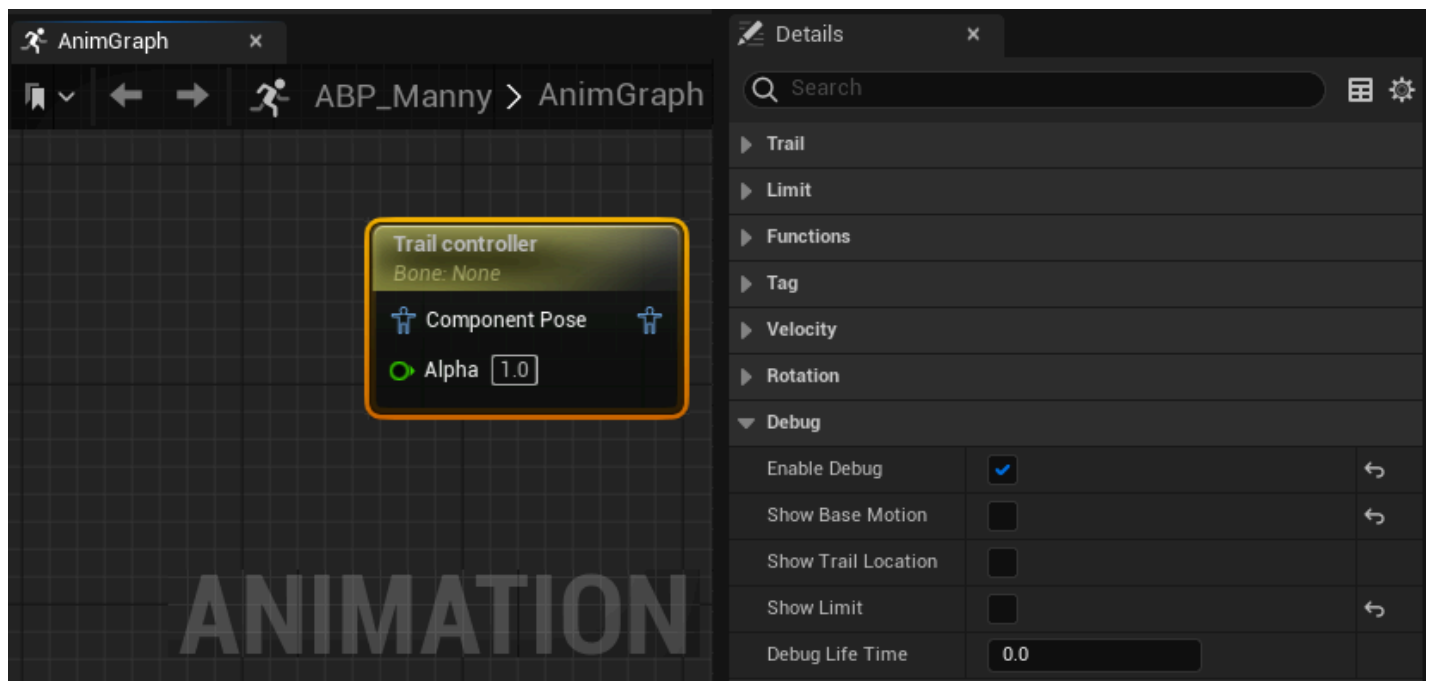
Here you can reference a list of the Trail Controller node's Limit, Velocity and Rotation properties

Property	Description
Limit Stretch	Enable a constraint on the structures stretching. This constraint can be set in the Stretch Limits property.

Property	Description
Limit Rotation	Enable rotation constraints and offsets on each chain point. Rotation constraints can be set on each chain point using the Indexes within the Rotation Limits property.
Use Planer limit	Enable planer constraints to eliminate motion past set planes. These planes can be added and set in within the Planer Limits property.
Max Delta Time	To avoid hitches caused by stretching the chain, you can use this property to clamp the length of the delta time. For example, if you want a 30 fps trail animation playback, set this property to 0.03333f (or 1/30).
Rotation Limits	<p>Set the rotation limits at each joint along the chain points. The highest Index number represents the Trail Bone and Index 0 represents the furthest bone from the Trail Bone in the chain.</p> <p>Limit Min: Set the minimum range of rotation on the X, Y and Z axis. Limit Max: Set the maximum range of rotation on the X, Y and Z axis.</p>
Rotation Offsets	Set a rotational offset, in degrees, for each joint's X , Y , and Z axes, along the chain. The highest Index number represents the Trail Bone and Index 0 represents the furthest bone from the Trail Bone in the chain.
Planer Limits	<p>Add and set planer limits to constrain the chain's motion from crossing a plane. After adding a planer limit with Add (+), you can adjust the following properties to set up a plane limit:</p> <p>Driving Bone: Select a bone from the character's skeleton that will become the reference point to set the Plane Transform properties. Plane Transform: Set the planer properties, Location, Rotation, and Scale, to limit the chain's motion, in context to the Driving Bone.</p>

Property	Description
Stretch Limits	Select how far the chain structure can stretch from the reference pose. A value of 0 will disable stretching, while values greater than 0 will increase the amount of stretching that is possible.
Actor Space Fake Vel	When enabled, simulated velocity will be applied in actor-space. When disabled, simulated velocity will be applied in world-space.
Fake Velocity	Here you can set the the simulated velocity vector that will be applied to the Base Joint .
Base Joint	Here you can select a bone from the character's skeleton to serve as the base joint that can receive a simulated velocity vector to apply motion to the chain.
Reorient Parent to Child	When enabled, child bones are free to rotate to preserve the structure integrity.
Last Bone Rotation Anim Alpha Blend	This property controls the blend between the parent joint of the structure and animated pose. With a value of 0, the last joint will copy the previous joints alpha. A value of 1 will use the animated pose.

Debug Properties



Here you can reference a list of the Trail Controller nodes Debug properties.

Property	Description
Enable Debug	Enables debug drawing in the preview viewport.
Show Base Motion	Draws red lines that follow the basic transform path, (X , Y and Z axes) of the structure. A dot will be drawn on the line to indicate the location of the joint before the application of any motion.
Show Trail Location	Draws color coded sections of lines, to delineate different segments of the chain, between each joint in the chain.
Show Limit	Draws any planer limits.
Debug Life Time	This value determines the duration of time any debug feature remains drawn in the viewport, in seconds.