FoxAnim

Animation, Montage & Bone Helpers for Blueprints

User Guide

Version 1.0

Alchemy Fox Studio

Supported Engine: UE 5.4, 5.6, 5.7

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Installation

Option A: Via Unreal Engine Tab

1. Open the Epic Games Launcher and go to the Unreal Engine tab.
2. Search for FoxAnim.
3. Click **Install to Engine**, select your Engine version, and click **Install**.
4. Open your project, go to **Edit > Plugins**, enable FoxAnim, then restart the editor.

Option B: Via Fab Library

1. Open the Epic Games Launcher and go to **Fab**.
2. Open **My Library**, search for FoxAnim and click on it.
3. Click **Install Plugin**, select your Engine version, and click **Install**.
4. Open your project, go to **Edit > Plugins**, enable FoxAnim, then restart the editor.

Option C: Manual Installation

1. Copy the FoxAnim/ folder into **YourProject/Plugins/**.
2. Right-click the .uproject file and select **Generate Visual Studio project files**.
3. Open the project, go to **Edit > Plugins**, enable FoxAnim, then restart the editor.

All nodes appear under **FoxAnim | <Category>** when you right-click in any Blueprint graph.

Supported Engine Version: **UE 5.4, 5.6, 5.7**

Quick Start Tutorial

Every FoxAnim node is a static Blueprint function — no setup, no initialization, no subsystem required (unless noted). Below are step-by-step examples showing how to use FoxAnim in real project scenarios.

Example 1: Play Random Attack Montage on Hit

Goal: Pick a random attack animation from a pool so hits never feel repetitive.

Prepare Your Montage Array

In your Character Blueprint, create a variable AttackMontages of type TArray. Populate it with 3–4 attack montage assets in the Details panel.

Add the Node

From your attack input event, drag out Play Random Montage. Connect the Target to GetMesh, Montages to your array variable, PlayRate to 1.0.

Handle Callbacks

Wire the On Completed output to your "EndAttack" logic (re-enable movement). Wire On Interrupted to an early-exit path (e.g. if staggered mid-swing).

Play and Test

Each attack press fires a different montage. The node handles null-safety and returns the PlayedMontage so you can log which animation played.

Example 2: Chained Death + Dissolve Sequence

Goal: Play a death montage, then automatically trigger a dissolve animation when it finishes.

Wire the Montage Chain

On your "OnDeath" event, call Play Montage Chain with your death montages array (death_start, death_loop, death_end).

React to Chain Completion

From On Chain Completed, trigger your dissolve material logic (e.g. via FoxMaterial's Dissolve Actor node). CurrentIndex output tells you which montage just finished.

Handle Interruption

From On Chain Interrupted (e.g. if actor is destroyed early), call Stop Montage Smooth with a 0.2-second blend-out to avoid snapping.

Play and Test

Kill an enemy — it plays all 3 montages sequentially, then seamlessly triggers the dissolve. Total: 2 nodes for the entire death sequence.

Example 3: Pause All Animation During Cutscene

Goal: Freeze all character animations at frame-perfect timing when a cinematic begins.

Collect Mesh References

When your cutscene begins, get all actors of class ACharacter in the world. For each one, get their SkeletalMeshComponent.

Pause Animation

Call Pause Animation on each SkeletalMeshComponent. This stores the current play rate and sets it to 0 — the pose freezes in place.

Resume on Cutscene End

When the cutscene ends, call Resume Animation on the same components. The stored play rate is restored exactly.

Tip

Call Get Animation Progress before pausing to save the normalized position — useful if you need to seek to the same frame after a level reload.

Node Reference

Complete reference for all 25 FoxAnim nodes organized by category. Each node includes a description, inputs, outputs, and a use case hint.

1. Montage (8 Nodes)

1.1 Play Random Montage

Provides 1.1 Play Random Montage functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
Montages	Array of Anim Montage	Gameplay tag name
PlayRate	Float	

Output	Type	Description
Return Value	UFoxPlayRandomMontage Action*	

Use Case: Montage helper — play, query or chain animation montages.

1.2 Play Montage Queued

Provides 1.2 Play Montage Queued functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
Montage	Anim Montage	Gameplay tag name
PlayRate	Float	

Output	Type	Description
Return Value	UFoxPlayMontageQueued Action*	

Use Case: Montage helper — play, query or chain animation montages.

1.3 Play Montage Chain

Provides 1.3 Play Montage Chain functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
Montages	Array of Anim Montage	Gameplay tag name
PlayRate	Float	

Output	Type	Description
Return Value	UFoxPlayMontageChainAction*	

Use Case: Montage helper — play, query or chain animation montages.

1.4 Play Montage On Section

Provides 1.4 Play Montage On Section functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
Montage	Anim Montage	Gameplay tag name
SectionName	Name	
PlayRate	Float	

(none)

Use Case: Montage helper — play, query or chain animation montages.

1.5 Get Active Montage Info

Provides 1.5 Get Active Montage Info functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	

Output	Type	Description
OutMontage	Anim Montage	Gameplay tag name
OutSectionName	Name	
OutPosition	Float	
OutRemainingTime	Float	Time in seconds
bIsPlaying	Bool	Boolean flag

Use Case: Montage helper — play, query or chain animation montages.

1.6 Is Any Montage Playing On Slot

Provides 1.6 Is Any Montage Playing On Slot functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
SlotName	Name	

Output	Type	Description
Return Value	Bool	

Use Case: Montage helper — play, query or chain animation montages.

1.7 Stop Montage Smooth

Provides 1.7 Stop Montage Smooth functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
BlendOutTime	Float	Time in seconds

(none)

Use Case: Montage helper — play, query or chain animation montages.

1.8 Play Montage With Auto Destroy

Provides 1.8 Play Montage With Auto Destroy functionality.

Input	Type	Description
Target	Actor Reference	
Montage	Anim Montage	Gameplay tag name
PlayRate	Float	
DestroyDelay	Float	

(none)

Use Case: Montage helper — play, query or chain animation montages.

2. Bone (5 Nodes)

2.1 Get Bone World Transform

Provides 2.1 Get Bone World Transform functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
BoneName	Name	

Output	Type	Description
Return Value	Transform	
bFound	Bool	Boolean flag

Use Case: Bone/socket query — read transforms and distances.

2.2 Get Socket World Transform

Provides 2.2 Get Socket World Transform functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
SocketName	Name	

Output	Type	Description
Return Value	Transform	
bFound	Bool	Boolean flag

Use Case: Bone/socket query — read transforms and distances.

2.3 Get Distance Between Bones

Provides 2.3 Get Distance Between Bones functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
BoneA	Name	
BoneB	Name	

Output	Type	Description
Return Value	Float	

Use Case: Bone/socket query — read transforms and distances.

2.4 Is Bone Near Location

Provides 2.4 Is Bone Near Location functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
BoneName	Name	
Location	Vector	World-space location
Radius	Float	Radius in units

Output	Type	Description
Return Value	Bool	
Distance	Float	

Use Case: Bone/socket query — read transforms and distances.

2.5 Get Closest Bone To Location

Provides 2.5 Get Closest Bone To Location functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
Location	Vector	World-space location

Output	Type	Description
Return Value	Name	
BoneLocation	Vector	World-space location
Distance	Float	

Use Case: Bone/socket query — read transforms and distances.

3. Playback (4 Nodes)

3.1 Pause Animation

Provides 3.1 Pause Animation functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

(none)

Use Case: Playback control — pause, resume or scrub animation state.

3.2 Resume Animation

Provides 3.2 Resume Animation functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

(none)

Use Case: Playback control — pause, resume or scrub animation state.

3.3 Get Animation Progress

Provides 3.3 Get Animation Progress functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

Output	Type	Description
Return Value	Float	

Use Case: Playback control — pause, resume or scrub animation state.

3.4 Get Montage Time Remaining

Provides 3.4 Get Montage Time Remaining functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

Output	Type	Description
Return Value	Float	
bIsPlaying	Bool	Boolean flag

Use Case: Playback control — pause, resume or scrub animation state.

4. State (4 Nodes)

4.1 Get Active State Name

Provides 4.1 Get Active State Name functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
StateMachineName	Name	

Output	Type	Description
Return Value	Name	
bFound	Bool	Boolean flag

Use Case: State mutator — change actor or runtime state.

4.2 Has Animation For Slot

Provides 4.2 Has Animation For Slot functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
SlotName	Name	

Output	Type	Description
Return Value	Bool	

Use Case: State mutator — change actor or runtime state.

4.3 Is Montage Section Active

Provides 4.3 Is Montage Section Active functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
SectionName	Name	

Output	Type	Description
Return Value	Bool	

Use Case: State mutator — change actor or runtime state.

4.4 Get Montage Play Rate

Provides 4.4 Get Montage Play Rate functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

Output	Type	Description
Return Value	Float	

Use Case: State mutator — change actor or runtime state.

5. Utility (4 Nodes)

5.1 Blend Out And Call

Provides 5.1 Blend Out And Call functionality.

Input	Type	Description
Target	USkeletalMeshComponent*	
BlendOutTime	Float	Time in seconds

Output	Type	Description
Return Value	UFoxBlendOutAndCallAction*	

Use Case: Utility helper — supporting function for the toolkit.

5.2 Set Skeletal Mesh Animation

Provides 5.2 Set Skeletal Mesh Animation functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	
AnimBP	Class Reference	
AnimMode	EFoxAnimMode	

(none)

Use Case: Utility helper — supporting function for the toolkit.

5.3 Get All Playing Montages

Provides 5.3 Get All Playing Montages functionality.

Input	Type	Description
Mesh	USkeletalMeshComponent*	

Output	Type	Description
Return Value	Array of Anim Montage	

Use Case: Utility helper — supporting function for the toolkit.

5.4 Match Animation To Movement Speed

Provides 5.4 Match Animation To Movement Speed functionality.

Input	Type	Description
Character	ACharacter*	
MinSpeed	Float	Speed value
MaxSpeed	Float	Speed value
MinPlayRate	Float	
MaxPlayRate	Float	

(none)

Use Case: Utility helper — supporting function for the toolkit.

Implementation Notes

- Montage chain/queue use UBlueprintAsyncActionBase with OnMontageEnded delegate chaining.
- Pause/Resume stores play rate in static TMap.
- Bone queries wrap GetBoneTransform(GetBoneIndex(BoneName)) with validation.
- All nodes take USkeletalMeshComponent* for maximum flexibility (works on Characters, standalone meshes, etc.).