

Dynamic Battle Music

Automatic Music Transitions Based on Enemy Detection

Version 2.0.0

UE 5.6 / 5.7

100% Blueprint

Quick Start Guide

Get dynamic battle music running in 5 minutes!

1 Enable the Plugin

1. Go to **Edit → Plugins**
2. Search for "**Dynamic Battle Music**"
3. Check **Enabled** and restart the editor

2 Add Component to Player

1. Open your **Player Character Blueprint**
2. Click **Add Component**
3. Search for "**Battle Music Component**"
4. Add it to your character

3 Assign Music Tracks

Select the Battle Music Component and in Details panel:

- **Calm Music** — Your exploration/ambient track

- **Battle Music** — Your combat/action track

4 Tag Your Enemies

Add the tag **Enemy** to all enemy actors:

1. Open Enemy Blueprint
2. Select the root component (Self)
3. In Details → Tags → Add "**Enemy**"

5 Play!

That's it! Music will automatically switch when enemies are nearby.

 **Calm Music**



 **Battle Music**

 **Auto-Start Enabled by Default**

Music starts automatically when the game begins. Disable `bAutoStart` if you want manual control.

Component Setup

Basic Configuration

PROPERTY	DEFAULT	DESCRIPTION
Calm Music	None	Sound asset for exploration/peaceful state
Battle Music	None	Sound asset for combat state
Detection Radius	2000 cm (20m)	How far to detect enemies
Enemy Tag	"Enemy"	Tag used to identify enemies
Check Interval	0.5 sec	How often to scan for enemies
Fade Time	2.0 sec	Crossfade duration between tracks
State Cooldown	1.0 sec	Minimum time between state changes
Auto Start	True	Start music on BeginPlay
Initial Volume	1.0	Starting volume (0.0-1.0)

V2.0 Advanced Features

★ Priority System

Different music for Boss/Elite/Regular enemies. Higher priority overrides lower.

📊 Intensity Modulation

Volume scales with enemy count. More enemies = louder music.

💾 Music Memory

Resume tracks from last position instead of restarting.

💀 Dead Enemy Filtering

Automatically ignore dead enemies (requires "Dead" tag).



Music States

State Machine

STATE	CONDITION	MUSIC PLAYING
Calm	No enemies in detection radius	Calm Music track
Battle	One or more enemies detected	Battle Music (or custom priority music)
Fading	Transitioning between states	Crossfading between tracks

Transition Flow

State Transition Logic

Calm State

Enemy Detected → Fading → Battle

Battle State

No Enemies → Fading → Calm

Cooldown prevents rapid state flickering

Enemy Detection

How Detection Works

1. Every `CheckInterval` seconds, performs sphere overlap
2. Finds all actors with `EnemyTag` within `DetectionRadius`
3. Filters out dead enemies (if `bIgnoreDeadEnemies` enabled)
4. Determines highest priority enemy (if priority system enabled)
5. Triggers state change if needed

Detection Settings

PROPERTY	DESCRIPTION
Detection Radius	Sphere radius in cm (2000 = 20 meters)
Enemy Tag	Tag to identify enemies (default: "Enemy")
Detection Channel	Collision channel for overlap (default: Visibility)
Check Interval	Seconds between scans (0.5 = twice per second)
Ignore Dead Enemies	Skip actors with "Dead" tag
Dead Enemy Tag	Tag identifying dead enemies (default: "Dead")

💡 Debug Visualization

Enable `bShowDebug` to see a colored sphere: Green = Calm, Red = Battle

★ Priority System

Play different music for different enemy types. Boss music overrides elite, elite overrides regular.

Priority Levels

PRIORITY	LEVEL	USE CASE
Boss	Highest	Boss fights, major encounters
Elite	Medium	Mini-bosses, elite enemies
Regular	Lowest	Standard enemies (uses default Battle Music)

Setup Priority System

1 Enable Priority System

Check `bUsePrioritySystem` in component settings.

2 Configure Enemy Priorities

Add entries to `EnemyPriorityConfigs` array:

ENEMY TAG	PRIORITY	CUSTOM MUSIC
"Boss"	Boss	BossMusic_Cue
"Elite"	Elite	EliteMusic_Cue
"Enemy"	Regular	None (uses Battle Music)

3 Tag Your Enemies

- Regular enemies: Tag = `Enemy`
- Elite enemies: Tags = `Enemy` + `Elite`
- Boss enemies: Tags = `Enemy` + `Boss`

Priority Logic

If you're fighting 5 regular enemies and 1 boss enters, music immediately switches to boss music. When boss dies, returns to regular battle music.

Intensity Modulation

Music volume scales dynamically based on how many enemies you're fighting.

Intensity Levels

INTENSITY	ENEMY COUNT	DEFAULT VOLUME
Low	1-2 enemies	60%
Medium	3-5 enemies	80%
High	6+ enemies	100%

Configuration

PROPERTY	DEFAULT	DESCRIPTION
bUseIntensityModulation	false	Enable/disable feature
MinIntensityVolume	0.6	Volume at 1 enemy
MaxIntensityVolume	1.0	Volume at 6+ enemies

Use Case

Creates tension that builds as more enemies join the fight. A single enemy feels like a skirmish, a horde feels epic!

Blueprint Functions

Playback Control

Start Music

Begin music playback. Called automatically if `bAutoStart` is true.

Exec

Stop Music

Stop all music playback.

Force Battle Music

Immediately switch to battle music (ignores detection).

Force Calm Music

Immediately switch to calm music (ignores detection).

Set Music Volume

Change music volume. Useful for cutscenes or dialogue.

◆ New Volume (0.0-1.0)

State Queries

Get Current Music State

◆ State (EMusicState)

Get Detected Enemy Count

◆ Count (int)

Get Current Enemy Priority

◆ Priority (EEEnemyPriority)

Get Current Intensity

◆ Intensity (EMusicIntensity)

Utility

Reset First Enemy Flag

Reset OnFirstEnemyDetected event. Use when restarting level.



Events (Delegates)

On Music State Changed

On Music State Changed

Fires when music state changes (Calm ↔ Battle).

◆ New State (EMusicState)

◆ Old State (EMusicState)

Use for UI updates, visual effects, gameplay changes

On First Enemy Detected

On First Enemy Detected

Fires ONCE when first enemy is detected (per session).

○ First Enemy (Actor)

Great for tutorials, achievements, first-time effects

On Music Intensity Changed

On Music Intensity Changed

Fires when intensity level changes (Low/Medium/High).

◆ New Intensity (EMusicIntensity)

◆ Enemy Count

Use for visual intensity effects, screen shake, etc.

How To Guides

How to: Show Combat UI When Battle Starts

Bind to On Music State Changed

◆ New State

Switch on EMusicState →

Battle: Show Combat HUD

Calm: Hide Combat HUD

How to: Dim Music During Dialogue

Dialogue Started

Battle Music Component → Set Music Volume (0.3)

Dialogue Ended

Battle Music Component → Set Music Volume (1.0)

How to: Play Boss Music

1. Enable `bUsePrioritySystem`
2. Add to EnemyPriorityConfigs: Tag="Boss", Priority=Boss, CustomMusic=YourBossTrack
3. Add tags to boss actor: "Enemy" + "Boss"
4. When boss is nearby, boss music plays automatically!

How to: Mark Enemy as Dead

Enemy Death Event

Self → Tags → Add ("Dead")

Component will stop counting this enemy immediately

How to: Manual Control (Scripted Sequences)

Cutscene Start

Force Calm Music →

Set Music Volume (0.5) →

Cutscene End (Boss Appears)

Force Battle Music →

Set Music Volume (1.0) →

Quick Reference

Enumerations

ENUM	VALUES
EMusicState	Calm, Battle, Fading
EEnemyPriority	Regular, Elite, Boss
EMusicIntensity	Low (1-2), Medium (3-5), High (6+)

Read-Only State Properties

PROPERTY	TYPE	DESCRIPTION
CurrentMusicState	EMusicState	Current state (Calm/Battle/Fading)
bMusicSystemActive	bool	Is music system running
DetectedEnemyCount	int32	Number of enemies in range
CurrentEnemyPriority	EEnemyPriority	Highest priority enemy detected
CurrentIntensity	EMusicIntensity	Current intensity level
bEverDetectedEnemy	bool	Has any enemy ever been detected

FEnemyPriorityConfig Structure

FIELD	TYPE	DESCRIPTION
EnemyTag	FName	Tag to identify this enemy type
Priority	EEnemyPriority	Priority level (Regular/Elite/Boss)
CustomMusic	USoundBase*	Custom music for this priority (optional)

Troubleshooting

Music doesn't play at all

1. Is `bAutoStart` enabled? Or did you call `StartMusic()` ?
2. Are **Calm Music** and **Battle Music** assigned?
3. Is the sound asset valid? Try playing it directly in Content Browser
4. Check volume is > 0 (`InitialVolume`)

Music doesn't switch to battle

1. Does your enemy have the `Enemy` tag?
2. Is enemy within `DetectionRadius` ? (default 2000cm = 20m)
3. Enable `bShowDebug` to visualize detection sphere
4. If using dead filtering, make sure enemy doesn't have "Dead" tag

Music switches too fast/slow

- Adjust `StateCooldown` to prevent rapid switching
- Adjust `FadeTime` for longer/shorter transitions

- Adjust `CheckInterval` for detection frequency

Priority music not playing

1. Is `bUsePrioritySystem` enabled?
2. Is `EnemyPriorityConfigs` array configured?
3. Does your boss/elite have BOTH tags? ("Enemy" + "Boss")
4. Is `CustomMusic` assigned in the priority config?

Intensity modulation not working

1. Is `bUseIntensityModulation` enabled?
2. Check `MinIntensityVolume` and `MaxIntensityVolume` values
3. Are multiple enemies actually in detection range?

💡 Debug Tips

- Enable `bShowDebug` for visual feedback
- Bind to events and Print the values

- Check `DetectedEnemyCount` in Details panel during play

Support

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Documentation: adrenalinegames.pl/dynamicbattlemusic

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