Structure

# PhysicsSimulationComponent

A component that controls localized physics simulations.

iOS 18.0+ | iPadOS 18.0+ | Mac Catalyst 18.0+ | macOS 15.0+ | tvOS 26.0+ | visionOS 1.0+

```
struct PhysicsSimulationComponent
```

## Overview

Simulate local physics by adding a `PhysicsSimulationComponent` to an entity. The component gives your app the ability to customize the physics simulation by configuring its properties, such as `gravity` and `collisionOptions`.

**Important**

Each physics simulation component uses meters as its unit of distance, which can be important to other types in the physics simulation, such as `ShapeResource` instances.

## Topics

### Structures

`struct CollisionOptions`

The options set that defines how a physics simulation reports collisions.

`struct SolverIterations`

The parameters that control the accuracy of solving physics simulations.

### Initializers

`init()`

### Instance Properties

`var clock: CMClockOrTimebase`

A custom clock which drives the physics simulation, defaults to the engine clock.

`var collisionOptions: PhysicsSimulationComponent.CollisionOptions`

Options for kinematic collision reporting.

`var gravity: SIMD3<Float>`

The gravity for the simulation relative to the simulation entity.

`var solverIterations: PhysicsSimulationComponent.SolverIterations`

The parameters that control the accuracy of solving physics simulations.

### Type Methods

`static func nearestSimulationEntity(for: Entity) -> Entity?`

Obtains the entity containing the physics simulation origin.

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## Relationships

### Conforms To

`Component`, `Equatable`

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## See Also

### Simulation setup

- Designing scene hierarchies for efficient physics simulation
  Configure your RealityKit scenes to avoid performance bottlenecks.
- Handling different-sized objects in physics simulations
  Set up a scene hierarchy for accurate physics simulations.