

[Updates](#) / RealityKit updates

Article

# RealityKit updates

Learn about important changes in RealityKit.



## Overview

Browse notable changes in [RealityKit](#).

## June 2025

### General

- Create hover effect groups to indicate entities that need to highlight together using [HoverEffectComponent.GroupID](#).
- Present popovers from volumes using [PresentationComponent](#).
- Manually create instances of entities using [MeshInstancesComponent](#).
- Animate entities implicitly using [animate\(\\_:body:completion:\)](#).
- Create and modify attachments in a more streamlined fashion using [ViewAttachmentComponent](#).
- Make entities render behind real-world objects based on depth using [EnvironmentBlendingComponent](#).
- Implement post-processing effects using [RealityViewPostProcessEffect](#) and [PostProcessEffectContext](#).
- Attach models together using [attach\(\\_:to:\)](#).
- [TextureResource](#) now supports AVIF textures and entities you load from USDZ files that contain AVIF textures using [init\(named:in:\)](#) so they render correctly.

- Load entities from Data objects using init(from:configurations:).

## Image presentation

- Generate spatial scenes using ImagePresentationComponent.Spatial3DImage and present them (along with 2D images and spatial photos) using ImagePresentationComponent.
- Receive notifications related to presenting images using ImagePresentationEvents.
- Use Model3DAsset with Model3D to play animations in Model3D Views.

## ARKit integration

- Receive updates about ARKit anchors directly in RealityKit using AnchorStateEvents and SceneEvents.TrackingStateUpdate.

## SwiftUI integration

- Use SwiftUI implicit animations using the Animation modifier with RealityKit entities and components.
- Keep SwiftUI state in sync with RealityKit state using doc://com.apple.documentation/documentation/realitykit/entity/observable-7cnpn.
- Present USD variants in Model3D using doc://com.apple.documentation/documentation/realitykit/entity/configurationcatalog-1b69q.
- Specify the frame sizing and alignment option for RealityView using RealityViewLayoutOption.

## Video presentation

- Play spatial video, 180°, 360°, wide-FOV APMP video, and Apple Immersive Video in VideoPlayerComponent.
- Retrieve the loading status when playing video using VideoPlayerComponent with currentRenderingStatus.
- Receive notifications when a video stops playing due to a comfort violation using VideoPlayerEvents.VideoComfortMitigationDidOccur.

## Gestures and entity interaction

- Implement six degree of freedom (6DOF) gestures for manipulating entities using [ManipulationComponent](#).
- Leverage [GestureComponent](#) to support gestures on individual entities.

## June 2024

### General

- Add artistic lights and shadows to your visionOS app with [PointLightComponent](#), [DirectionalLightComponent](#), [SpotLightComponent](#), and [DynamicLightShadowComponent](#).
- Manage spatial tracking in your app with the [SpatialTrackingSession](#).
- Use [LowLevelMesh](#) to efficiently bring your mesh data to RealityKit, including custom vertex attributes, formats, and layouts.
- Use an [AnimationLibraryComponent](#) to store associated animations with an entity that plays the animations.
- Create an [IKComponent](#) to animate a skeletal model with an inverse kinematics [IKComponent.Solver](#).
- Use an [AudioLibraryComponent](#) to store associated audio with an entity that plays the audio.
- Stream generated audio in real time with [AudioGeneratorController](#).
- Manage the meshes on your blend shapes with [BlendShapeWeightsComponent](#).
- Create more engaging sound effects by configuring rolloff and reverb with the [SpatialAudioComponent](#).
- Customize hover effects when using [HoverEffectComponent](#), such as spotlight styles, highlight styles, or shader-backed hover effects for additional control over hover behaviors.

### Models and materials

- Optimize material initialization with a [CustomMaterial.Program](#) to compile backing shaders.
- Use `doc://com.apple.documentation/documentation/realitykit/textureresource/init(from:)-42r55` to efficiently update custom texture data in RealityKit, including custom pixel formats, texture types, swizzle, and texture usage.
- Create cube texture resources with `doc://com.apple.documentation/documentation/realitykit/textureresource/init(cubefromrequirect`

angular:quality:facesize:options:)-bqd7 or  
doc://com.apple.documentation/documentation/realitykit/textureresource/init(cubefromimage:named:options:)-9dcus.

- Access additional texture resource properties: [arrayLength](#), [depth](#), [pixelFormat](#), and [textureType](#).
- Add a clearcoat to your custom materials with [clearcoatNormal](#).

## Physics and simulations






- Apply force effects on rigid bodies with the [ForceEffect](#).
- Create simulations such as hinge and slider joints with [PhysicsJoint](#).

## Immersive environments

- Anchor dockable videos by attaching a [DockingRegionComponent](#) to your entity.
  - Peer into other immersive worlds with a [PortalComponent](#), and allow objects from that world to enter yours with [PortalCrossingComponent](#).
  - Further control the lighting in your environment with [EnvironmentLightingConfigurationComponent](#).
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## See Also

### Technology updates

-  [Accelerate updates](#)  
Learn about important changes to Accelerate.
-  [Accessibility updates](#)  
Learn about important changes to Accessibility.
-  [ActivityKit updates](#)  
Learn about important changes in ActivityKit.
-  [AdAttributionKit Updates](#)  
Learn about important changes to AdAttributionKit.
-  [App Clips updates](#)

Learn about important changes in App Clips.



App Intents updates

Learn about important changes in App Intents.



AppKit updates

Learn about important changes to AppKit.



Apple Intelligence updates

Learn about important changes to Apple Intelligence.



AppleMapsServerAPI Updates

Learn about important changes to AppleMapsServerAPI.



Apple Pencil updates

Learn about important changes to Apple Pencil.



ARKit updates

Learn about important changes to ARKit.



Audio Toolbox updates

Learn about important changes to Audio Toolbox.



AuthenticationServices updates

Learn about important changes to AuthenticationServices.



AVFAudio updates

Learn about important changes to AVFAudio.



AVFoundation updates

Learn about important changes to AVFoundation.