

[Audio Toolbox](#) / Workgroup Management

API Collection

Workgroup Management

Coordinate the activity of custom real-time audio threads with those of the system and other processes.

Overview

Real-time audio rendering often requires coordination between the threads of an app, the system, and the threads of any active Audio Unit plug-ins. Workgroups provide the mechanism to coordinate the efforts of these different processes, and ensure that they execute on the same schedule. In an Audio Unit, use a render context observer to retrieve the workgroup that the host app uses for real-time audio rendering. In an app, fetch the workgroup for a Core Audio device directly from the device or from your [AUAudioUnit](#) object.

If your app has real-time rendering threads that operate on their own deadlines, create your own workgroup using the [AudioWorkIntervalCreate](#) function. Use your custom workgroup to set and update the rendering schedule for your threads.

Topics

Essentials

Understanding Audio Workgroups

Learn how to optimize real-time rendering performance with the Audio Workgroups API.

Adding Parallel Real-Time Threads to Audio Workgroups

Optimize the performance of real-time audio threads that run in sync with the I/O thread by adding them to the audio device workgroup.



Adding Asynchronous Real-Time Threads to Audio Workgroups

Optimize system performance by adding real-time audio threads that run asynchronously to the I/O thread to custom audio workgroups.



Adding Audio Unit Auxiliary Real-Time Threads to Audio Workgroups

If your Audio Unit plug-in creates auxiliary real-time rendering threads, add them to the host app's audio workgroup so the system can schedule them appropriately.

Device Workgroup

```
var kAudioDevicePropertyIOThreadOSWorkgroup: AudioObjectPropertySelector { get }
```

The device's workgroup object, which you use to coordinate your threads with the threads of the device.

See Also

Utilities



Analyzing audio performance with Instruments

Ensure a smooth and immersive audio experience in your apps using Audio System Trace.



Audio Converter Services

Convert between linear PCM audio formats, and between linear PCM and compressed formats.



Audio Session Support

Describe the properties that you associate with audio sessions and audio routes.



Audio Toolbox Debugging

Obtain the internal state of Core Audio objects during the development and debugging of your code.



Audio Codec

Translate audio data from one format to another.



Clock Utilities

Manage time-related information associated with audio playback.