

[AudioDriverKit](#) / [IOUserAudioDevice](#)

## Class

# IOUserAudioDevice

An audio clock device object that handles the configurations for running I/O.

DriverKit 21.0+

```
class IOUserAudioDevice;
```

## Overview

The [IOUserAudioDevice](#) class subclasses [IOUserAudioClockDevice](#) and can contain [IOUserAudioStream](#) instances that perform I/O for the audio device.

## Topics

### Creating an Audio Device

#### Create

Allocates and initializes an instance of the audio device class.

#### init

Initializes an instance of the audio device class.

#### IOUserAudioDriver

A DriverKit provider object that manages communications with an audio device.

### Freeing an Audio Device

`free`

Frees the audio device.

## Getting Information About the Class

`GetClassID`

Gets the audio class identifier of the object.

`GetBaseClassID`

Gets the audio class identifier of the base class object.

`IOUserAudioClassID`

An identifier for the type of audio object.

## Performing I/O

`StartIO`

Tells the device to start I/O.

`StopIO`

Tells the device to stop I/O.

`IOUserAudioStartStopFlags`

Values that indicate I/O starts or stops.

## Supporting Device Configuration Changes

`PerformDeviceConfigurationChange`

Tells the device to handle a configuration change.

`AbortDeviceConfigurationChange`

Tells the device to stop handling a configuration change.

## Supporting Sample Rate Changes

`HandleChangeSampleRate`

Tells the device the sample rate is changing.

`DeviceSampleRateChanged`

Updates stream formats, in response to the owning audio device changing its sample rate.

## Working with Audio Streams

### AddStream

Adds an audio stream to the device.

### RemoveStream

Removes an audio stream from the device.

### IOUserAudioStream

An audio object that performs I/O for an audio device.

## Working with Default Device Behavior

### SetCanBeDefaultInputDevice

Sets a Boolean value that indicates if this device can be the host's default input device.

### CanBeDefaultInputDevice

Returns a Boolean value that indicates if this device can be the host's default input device.

### SetCanBeDefaultOutputDevice

Sets a Boolean value that indicates if this device can be the host's default output device.

### CanBeDefaultOutputDevice

Returns a Boolean value that indicates if this device can be the host's default output device.

### SetCanBeDefaultSystemOutputDevice

Sets a Boolean value that indicates if this device can be the system's default output device.

### CanBeDefaultSystemOutputDevice

Returns a Boolean value that indicates if this device can be the system's default output device.

## Working with Safety Offset Behavior

### SetInputSafetyOffset

Specifies the input safety offset of the device.

### GetInputSafetyOffset

Returns the input safety offset of the device.

**SetOutputSafetyOffset**

Specifies the output safety offset of the device.

**GetOutputSafetyOffset**

Returns the output safety offset of the device.

## Working with Channel Layouts

**SetPreferredChannelsForStereo**

Sets the channel indices for the preferred stereo pair.

**GetPreferredChannelsForStereo**

Returns the channel indices for the preferred stereo pair.

**SetPreferredInputChannelLayout**

Sets the input channel layout, using an array of audio channel label values.

**SetPreferredOutputChannelLayout**

Sets the output channel layout, using an array of audio channel label values.

**IOUserAudioChannelLabel**

Constants to set the preferred channel layout on an audio device.

## Instance Methods

**GetCurrentClientIOTime**

**SetIOOperationHandler**

**SetWantsStreamFormatsRestored**

---

## Relationships

### Inherits From

**IOUserAudioClockDevice**

---

# See Also

## Working with Audio Devices

`IOUserAudioClockDevice`

An audio clock device object, used to synchronize and perform I/O.