API Collection

Audio Converter Services

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

Overview

Audio converter objects convert between various linear PCM audio formats. They can also convert between linear PCM and compressed formats. Supported transformations include the following:

- PCM bit depth
- PCM sample rate
- PCM floating point to and from PCM integer
- PCM interleaved to and from PCM deinterleaved
- PCM to and from compressed formats

A single audio converter may perform more than one of the listed transformations.

Topics

Managing Audio Converter Objects

```
func AudioConverterNew(UnsafePointer<AudioStreamBasicDescription>,
UnsafePointer<AudioStreamBasicDescription>, UnsafeMutablePointer<Audio
ConverterRef?>) -> OSStatus
```

Creates a new audio converter object based on specified audio formats.

`func AudioConverterNewSpecific(UnsafePointer<AudioStreamBasicDescription>, UnsafePointer<AudioStreamBasicDescription>, UInt32, UnsafePointer<AudioClassDescription>, UnsafeMutablePointer<AudioConverterRef?>) -> OSStatus`

Creates a new audio converter object using a specified codec.

`func AudioConverterReset(AudioConverterRef) -> OSStatus`

Resets an audio converter object, clearing and flushing its buffers.

`func AudioConverterDispose(AudioConverterRef) -> OSStatus`

Disposes of an audio converter object.

Configuring Audio Converter Properties

`func AudioConverterGetProperty(AudioConverterRef, AudioConverterPropertyID, UnsafeMutablePointer<UInt32>, UnsafeMutableRawPointer) -> OSStatus`

Gets an audio converter property value.

`func AudioConverterGetPropertyInfo(AudioConverterRef, AudioConverterPropertyID, UnsafeMutablePointer<UInt32>?, UnsafeMutablePointer<DarwinBoolean>?) -> OSStatus`

Gets information about an audio converter property.

`func AudioConverterSetProperty(AudioConverterRef, AudioConverterPropertyID, UInt32, UnsafeRawPointer) -> OSStatus`

Sets the value of an audio converter object property.

Performing Conversions

{} Encoding and decoding audio

Convert audio formats to efficiently manage data and quality.

`func AudioConverterConvertBuffer(AudioConverterRef, UInt32, UnsafeRawPointer, UnsafeMutablePointer<UInt32>, UnsafeMutableRawPointer) -> OSStatus`

Converts audio data from one linear PCM format to another.

`func AudioConverterFillComplexBuffer(AudioConverterRef, AudioConverterComplexInputDataProc, UnsafeMutableRawPointer?, UnsafeMutablePointer<UInt32>, UnsafeMutablePointer<AudioBufferList>, UnsafeMutablePointer<AudioStreamPacketDescription>?) -> OSStatus`

Converts audio data supplied by a callback function, supporting non-interleaved and packetized formats.

`func AudioConverterConvertComplexBuffer(AudioConverterRef, UInt32, UnsafePointer<AudioBufferList>, UnsafeMutablePointer<AudioBufferList>) -> OSStatus`

Converts audio data from one linear PCM format to another, where both use the same sample rate.

Callbacks

`typealias AudioConverterComplexInputDataProc`

Supplies input data to the `AudioConverterFillComplexBuffer(_:_:_:_:_:_:)` function.

`typealias AudioConverterInputDataProc`

Deprecated. Use `AudioConverterFillComplexBuffer(_:_:_:_:_:_:)` instead.

Data Types

`struct AudioConverterPrimeInfo`

Specifies priming information for an audio converter.

`typealias AudioConverterRef`

A reference to an audio converter object.

`typealias AudioConverterPropertyID`

An audio converter property identifier.

Constants

Audio Converter Properties

Audio converter properties, used with the `AudioConverterGetPropertyInfo(_:_:_:_:)`, `AudioConverterGetProperty(_:_:_:_:)`, and `AudioConverterSetProperty(_:_:_:_:)` functions.

- Converter Priming Constants

  Constants used with the `kAudioConverterPrimeMethod` property.

- Sample Rate Conversion Quality Identifiers

  Specifiers for sample rate conversion quality, used for the `kAudioConverterSampleRateConverterQuality` property.

- Sample Rate Conversion Complexity Identifiers

  Specifiers for the sample rate conversion algorithm, used for the `kAudioConverterSampleRateConverterComplexity` property.

Enumerations

- Converter Audio Unit Properties

  Properties for the Apple AUConverter audio unit.

- Converter Audio Unit Subtypes

  Audio data format converter audio unit subtypes for audio units provided by Apple.

- Audio Converter Dithering Algorithms

- Audio Converter Properties (macOS)

- Audio Converter Errors

Result Codes

This table lists result codes defined for Audio Converter Services.

```
var kAudioConverterErr_FormatNotSupported: OSStatus
```

```
var kAudioConverterErr_OperationNotSupported: OSStatus
```

```
var kAudioConverterErr_PropertyNotSupported: OSStatus
```

```
var kAudioConverterErr_InvalidInputSize: OSStatus
```

```
var kAudioConverterErr_InvalidOutputSize: OSStatus
```

The byte size is not an integer multiple of the frame size.

```
var kAudioConverterErr_UnspecifiedError: OSStatus
```

```
var kAudioConverterErr_BadPropertySizeError: OSStatus
```

```
var kAudioConverterErr_RequiresPacketDescriptionsError: OSStatus
```

`var kAudioConverterErr_InputSampleRateOutOfRange: OSStatus`

`var kAudioConverterErr_OutputSampleRateOutOfRange: OSStatus`

`var kAudioConverterErr_HardwareInUse: OSStatus`

Returned from the `AudioConverterFillComplexBuffer(_:_:_:_:_:)` function if the underlying hardware codec has become unavailable, probably due to an audio interruption.

`var kAudioConverterErr_NoHardwarePermission: OSStatus`

Returned from the `AudioConverterNew(_:_:_:)` function if the new converter would use a hardware codec which the application does not have permission to use.

See Also

Utilities

Analyzing audio performance with Instruments

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

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.

Workgroup Management

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

Audio Codec

Translate audio data from one format to another.

Clock Utilities

Manage time-related information associated with audio playback.