Protocol

MTLSamplerState

An instance that defines how a texture should be sampled.

iOS 8.0+ | iPadOS 8.0+ | Mac Catalyst 13.1+ | macOS 10.11+ | tvOS | visionOS 1.0+

```
protocol MTLSamplerState : NSObjectProtocol, Sendable
```

Mentioned in

- Improving CPU performance by using argument buffers
- Adding mipmap filtering to samplers

Overview

The `MTLSamplerState` protocol defines the interface for a lightweight instance used to encode how a shader or compute kernel should sample a texture. To create a sampler state instance:

1. Create an `MTLSamplerDescriptor` instance.
2. Set the desired properties of the sampler descriptor, including filtering options, addressing modes, maximum anisotropy, and level-of-detail parameters.
3. Call the `makeSamplerState(descriptor:)` method of the `MTLDevice` instance.

(Your app does not define a class that implements the `MTLSamplerState` protocol.)

You can either release the `MTLSamplerDescriptor` instance or modify its property values and reuse it to create more `MTLSamplerState` instances. The descriptor's properties are only used during instance creation; once created the behavior of a sampler state instance is fixed and cannot be changed.

Topics

Identifying the sampler

`var device: any MTLDevice`

The device object that created the sampler.

Required

`var label: String?`

A string that identifies the sampler.

Required

Instance Properties

`var gpuResourceID: MTLResourceID`

Required

Relationships

Inherits From

`NSObjectProtocol`, `Sendable`, `SendableMetatype`

See Also

Texture samplers

{} Creating and sampling textures

Load image data into a texture and apply it to a quadrangle.

`class MTLSamplerDescriptor`

An object that you use to configure a texture sampler.

`struct` `MTLSamplePosition`

A subpixel sample position for use in multisample antialiasing (MSAA).

`enum` `MTLSamplerReductionMode`

Configures how the sampler aggregates contributing samples to a final value.