Instance Method

# convolve(with:divisor:bias:edgeMode:destination:)

Convolves an 8-bit-per-channel, 4-channel interleaved pixel buffer.

iOS 16.0+ | iPadOS 16.0+ | Mac Catalyst | macOS 13.0+ | tvOS 16.0+ | visionOS | watchOS 9.0+

```
func convolve(
    with kernel: vImage.ConvolutionKernel2D<Int16>,
    divisor: Int32?,
    bias: Int32? = nil,
    edgeMode: vImage.EdgeMode<Pixel_8888>,
    destination: vImage.PixelBuffer<Format>
)
```

Available when `Format` is `vImage.Interleaved8x4`.

## Parameters

**`kernel`**
The convolution kernel.

**`divisor`**
An optional value that the operation adds to the sum of weighted pixels before it applies the divisor.

**`bias`**
An optional value that the operation adds to the sum of weighted pixels before it applies the divisor.

`edgeMode`
The convolution edge mode.

`destination`
The destination pixel buffer.

# See Also

## Related Documentation

{} Blurring an image

Filter an image by convolving it with custom and high-speed kernels.

## General convolution

```
func convolve(with: vImage.ConvolutionKernel2D<Int16>, divisor: Int32?, bias: Int32?, edgeMode: vImage.EdgeMode<Pixel_8>, destination: vImage.PixelBuffer<Format>)
```

Convolves an 8-bit planar pixel buffer.

```
func convolve(with: vImage.ConvolutionKernel2D<Float>, bias: Float?, edgeMode: vImage.EdgeMode<Pixel_16F>, useFloat16Accumulator: Bool, destination: vImage.PixelBuffer<Format>)
```

Convolves a floating-point 16-bit planar pixel buffer.

```
func convolve(with: vImage.ConvolutionKernel2D<Float>, bias: Float?, edgeMode: vImage.EdgeMode<Pixel_F>, destination: vImage.PixelBuffer<Format>)
```

Convolves a 32-bit planar pixel buffer.

```
func convolve(with: (vImage.ConvolutionKernel2D<Int16>, vImage.ConvolutionKernel2D<Int16>, vImage.ConvolutionKernel2D<Int16>, vImage.ConvolutionKernel2D<Int16>), divisors: (Int32, Int32, Int32, Int32)?, biases: (Int32, Int32, Int32, Int32), edgeMode: vImage.EdgeMode<Pixel_8888>, destination: vImage.PixelBuffer<Format>)
```

Convolves an 8-bit-per-channel, 4-channel interleaved pixel buffer with separate kernels for each channel.

```
func convolve(with: vImage.ConvolutionKernel2D<Float>, bias: Float?,
edgeMode: vImage.EdgeMode<Pixel_ARGB_16F>, useFloat16Accumulator: Bool,
destination: vImage.PixelBuffer<Format>)
```

Convolves a floating-point 16-bit-per-channel, 4-channel interleaved pixel buffer.

```
func convolve(with: vImage.ConvolutionKernel2D<Float>, bias: Float?,
edgeMode: vImage.EdgeMode<Pixel_FFFF>, destination: vImage.PixelBuffer<
Format>)
```

Convolves a 32-bit-per-channel, 4-channel interleaved pixel buffer.

```
func convolve(with: vImage.ConvolutionKernel2D<Int16>, divisor: Int32?,
bias: Int32?, edgeMode: vImage.EdgeMode<Pixel_8>, destination: vImage.
PixelBuffer<Format>)
```

Convolves an 8-bit multiple plane pixel buffer.

```
func convolve(with: vImage.ConvolutionKernel2D<Float>, bias: Float?,
edgeMode: vImage.EdgeMode<Pixel_F>, destination: vImage.PixelBuffer<
Format>)
```

Convolves a 32-bit multiple plane pixel buffer.

```
enum EdgeMode
```

Constants that specify edge modes for convolution operations.

```
struct ConvolutionKernel2D
```

A 2D matrix that represents a convolution kernel.