

#WWDC19

Exploring Tinted Graphic Complications

Jared McGann, watchOS Engineering Manager



MON 3



10:09

UVI 5.0 MODERATE







Tinted Gauges

Displayed in a solid color

- System determines tint color



Tinted Gauges

Displayed in a solid color

- System determines tint color



Tinted Text

Displayed in a single color



Tinted Text

Displayed in a single color



Tinted Images

Desaturated by default

New API in `CLKFullColorImageProvider` to provide alternate images



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Desaturated by default

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Data Providers

Manage the data you display in a complication

Text, images and gauges

- **Examples:** `CLKSimpleTextProvider`, `CLKTimeIntervalTextProvider`, `CLKFullColorImageProvider`, `CLKSimpleGaugeProvider`, ...

```
// CLKFullColorImageProvider

open class CLKFullColorImageProvider : NSObject, NSCopying {

    open var image: UIImage

    open var accessibilityLabel: String?

}
```

```
// CLKFullColorImageProvider

open class CLKFullColorImageProvider : NSObject, NSCopying {

    open var image: UIImage

    open var accessibilityLabel: String?

}
```

```
// CLKFullColorImageProvider
```

```
open class CLKFullColorImageProvider : NSObject, NSCopying {
```

```
    open var image: UIImage
```

```
    open var accessibilityLabel: String?
```

```
}
```



NEW

```
// Alternate image for tinted contexts

open class CLKFullColorImageProvider : NSObject, NSCopying {

    open var image: UIImage

    open var accessibilityLabel: String?

    open var tintedImageProvider: CLKImageProvider?

}
```

```
// CLKImageProvider

open class CLKImageProvider : NSObject, NSCopying {

    open var onePieceImage: UIImage

    open var tintColor: UIColor?

    open var twoPieceImageBackground: UIImage?

    open var twoPieceImageForeground: UIImage?

    open var accessibilityLabel: String?

}
```



```
// CLKImageProvider

open class CLKImageProvider : NSObject, NSCopying {

    open var onePieceImage: UIImage

    open var tint_color: UIColor?

    open var twoPieceImageBackground: UIImage?

    open var twoPieceImageForeground: UIImage?

    open var accessibilityLabel: String?

}
```

```
// CLKImageProvider

open class CLKImageProvider : NSObject, NSCopying {

    open var onePieceImage: UIImage

    open var tintColor: UIColor?

    open var twoPieceImageBackground: UIImage?

    open var twoPieceImageForeground: UIImage?

    open var accessibilityLabel: String?

}
```

```
// CLKImageProvider

open class CLKImageProvider : NSObject, NSCopying {

    open var onePieceImage: UIImage

    open var tintColor: UIColor?

    open var twoPieceImageBackground: UIImage?

    open var twoPieceImageForeground: UIImage?

    open var accessibilityLabel: String?

}
```





```
// Tinted Image - Default Behavior
```

```
var fullColorImage = UIImage(named: "FullColorImage")!
```

```
var imageProvider = CLKFullColorImageProvider(fullColorImage: fullColorImage)
```

```
var imageProviderAlt = CLKFullColorImageProvider(fullColorImage: fullColorImage,  
tintedImageProvider: nil)
```



```
// Tinted Image - One-Piece Image

var fullColorImage = UIImage(named: "FullColorImage")!

var onePieceImage = UIImage(named: "MonochromeImage")!
var tintedImageProvider = CLKImageProvider(onePieceImage: onePieceImage)

var imageProvider = CLKFullColorImageProvider(fullColorImage: fullColorImage,
tintedImageProvider: tintedImageProvider)
```



```
// Tinted Image - One-Piece Image

var fullColorImage = UIImage(named: "FullColorImage")!

var tintedImageProvider = CLKImageProvider(onePieceImage: fullColorImage)

var imageProvider = CLKFullColorImageProvider(fullColorImage: fullColorImage,
tintedImageProvider: tintedImageProvider)
```



```
// Tinted Image - Two-Piece Image

var fullColorImage = UIImage(named: "FullColorImage")!

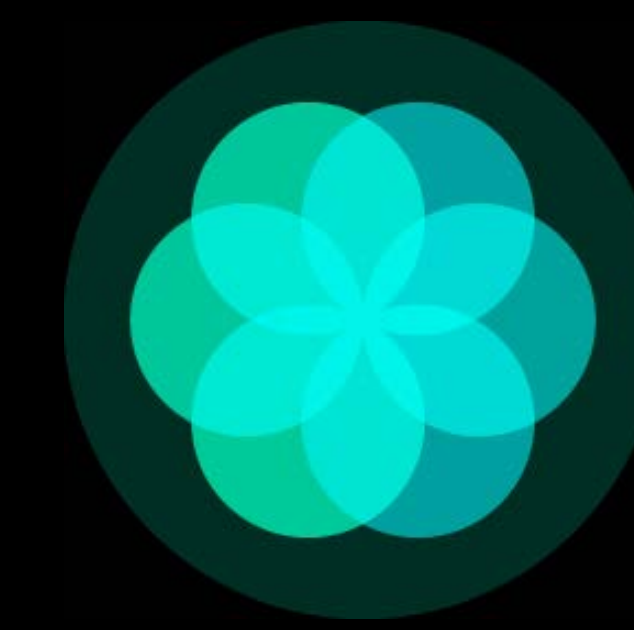
var onePieceImage = UIImage(named: "MonochromeImage")!
var backgroundImage = UIImage(named: "BackgroundImage")!
var foregroundImage = UIImage(named: "ForegroundImage")!
var tintedImageProvider = CLKImageProvider(onePieceImage: onePieceImage,
twoPieceBackgroundImage: backgroundImage, twoPieceForegroundImage: foregroundImage)

var imageProvider = CLKFullColorImageProvider(fullColorImage: fullColorImage,
tintedImageProvider: tintedImageProvider)
```



CUP
10:09AM, +0HRS

8:00AM YOGA • FLOW STUDIO
FRI
23



Water Reminders

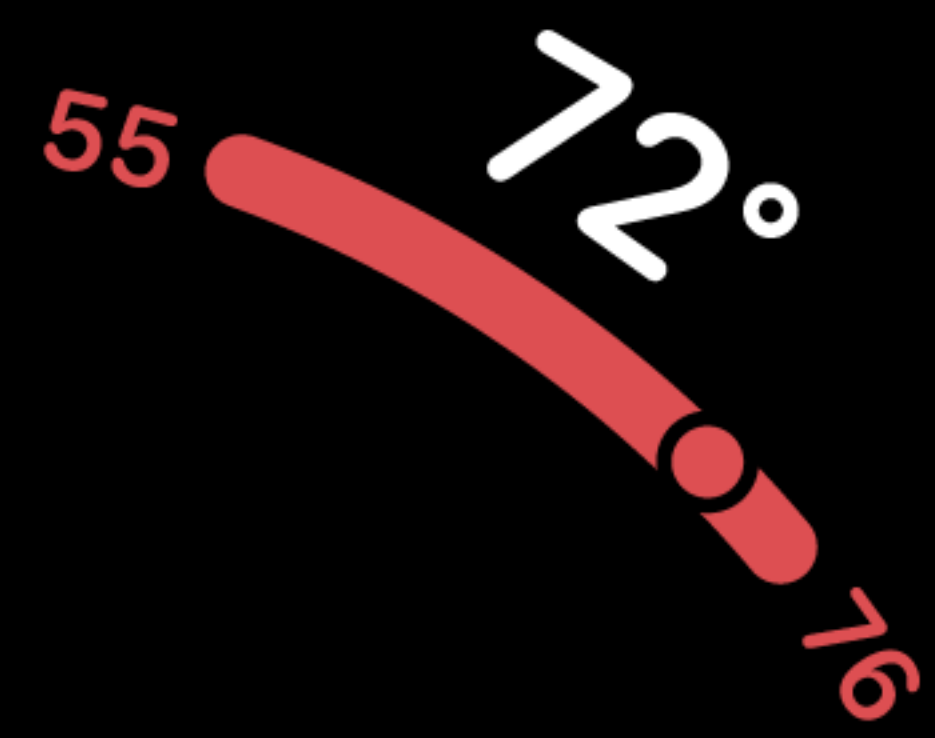
32 oz. consumed

4 day streak! Wooahoo!

Water Reminder

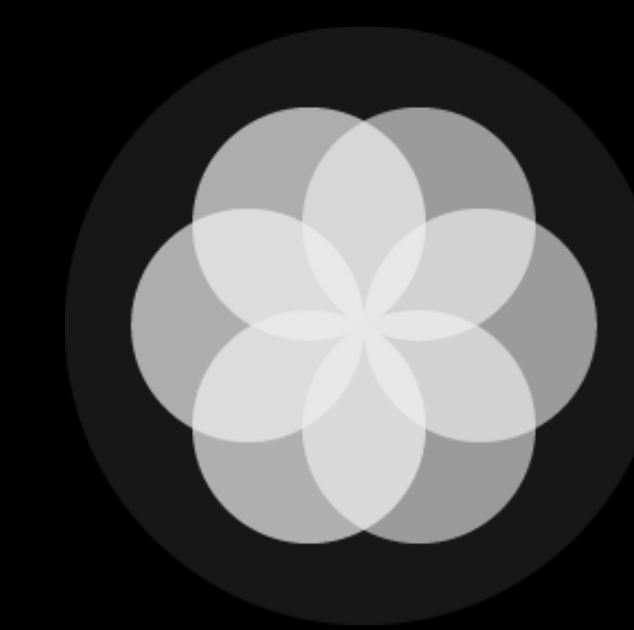
32 oz. consumed





CUP
10:09AM, +0HRS

8:00AM YOGA • FLOW STUDIO
FRI
23



Water Reminders

32 oz. consumed

4 day streak! Wooahoo!

Water Reminder

32 oz. consumed



Key Takeaways

Complications are altered in tinted contexts

System always determines color

New API to provide alternate template images

More Information

developer.apple.com/wwdc19/253

Developing Complications for Apple Watch Series 4

Tech Talks 2018

Creating Complications with ClockKit

WWDC 2015

