



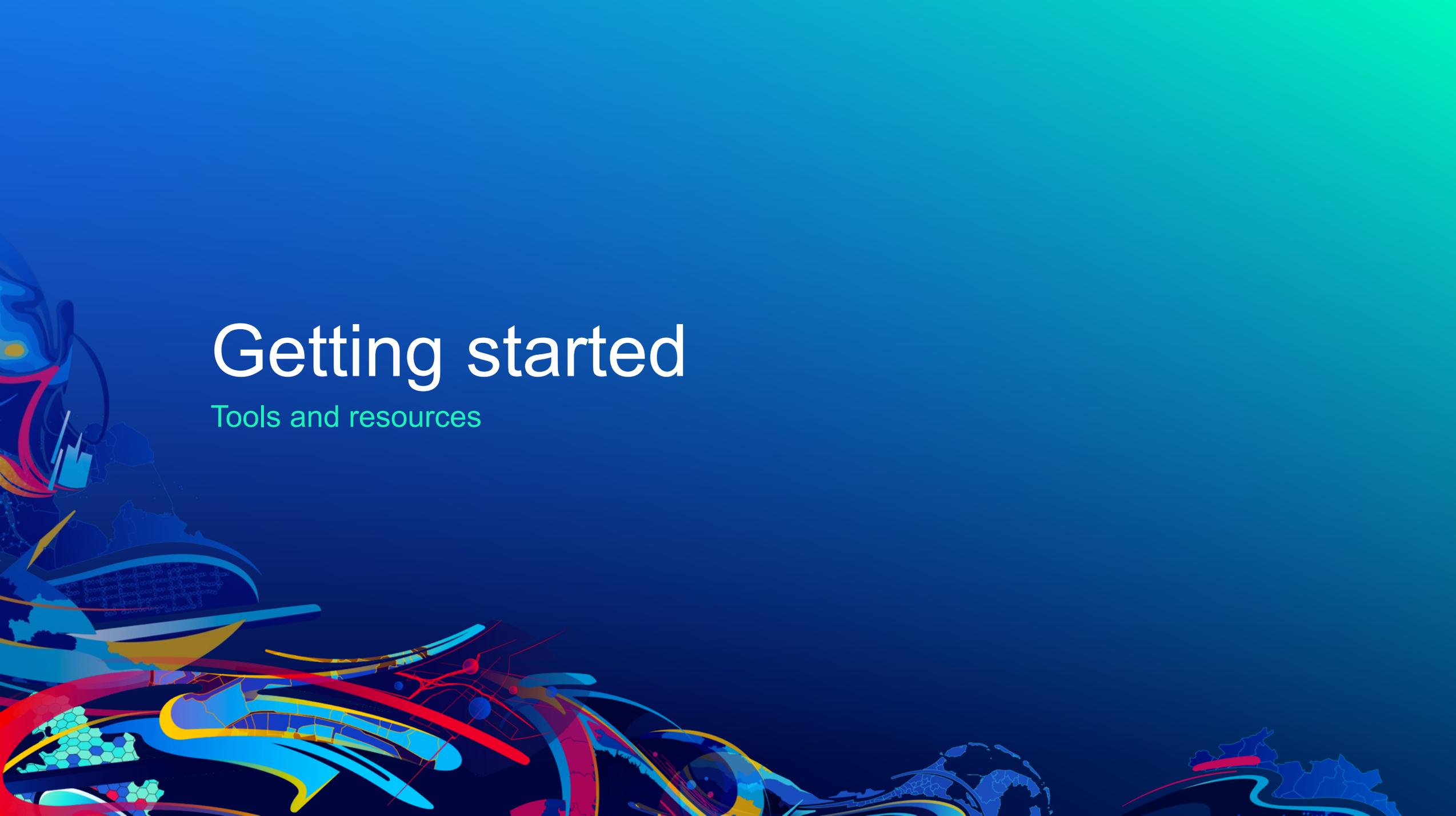
ArcGIS Runtime SDK for iOS Building Apps

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2021 ESRI
DEVELOPER SUMMIT

Agenda

- Getting Started
- Core Workflows
 - API keys
 - Map and MapView
 - Display data
 - Interact with the MapView
 - Geocoding & Routing
 - GPS
 - Tips and Information



Getting started

Tools and resources

You'll need...

- A Mac (macOS 10.15 or later)
- Xcode 12 (free from the Mac App Store)
- Apple Developer Account (free)
- ArcGIS Developer Account (free)
 - (or an ArcGIS Online account)
- ArcGIS Runtime:
 - iOS 14, 13, 12
 - Swift and/or Objective-C

iOS and iPadOS Usage

As measured by the App Store on
December 15, 2020.

iPhone

81% of all devices introduced in the last four years use iOS 14.

81%

iOS 14

- 81% iOS 14
- 17% iOS 13
- 2% Earlier

72% of all devices use iOS 14.

72%

iOS 14

- 72% iOS 14
- 18% iOS 13
- 10% Earlier

15th December 2020

Installation

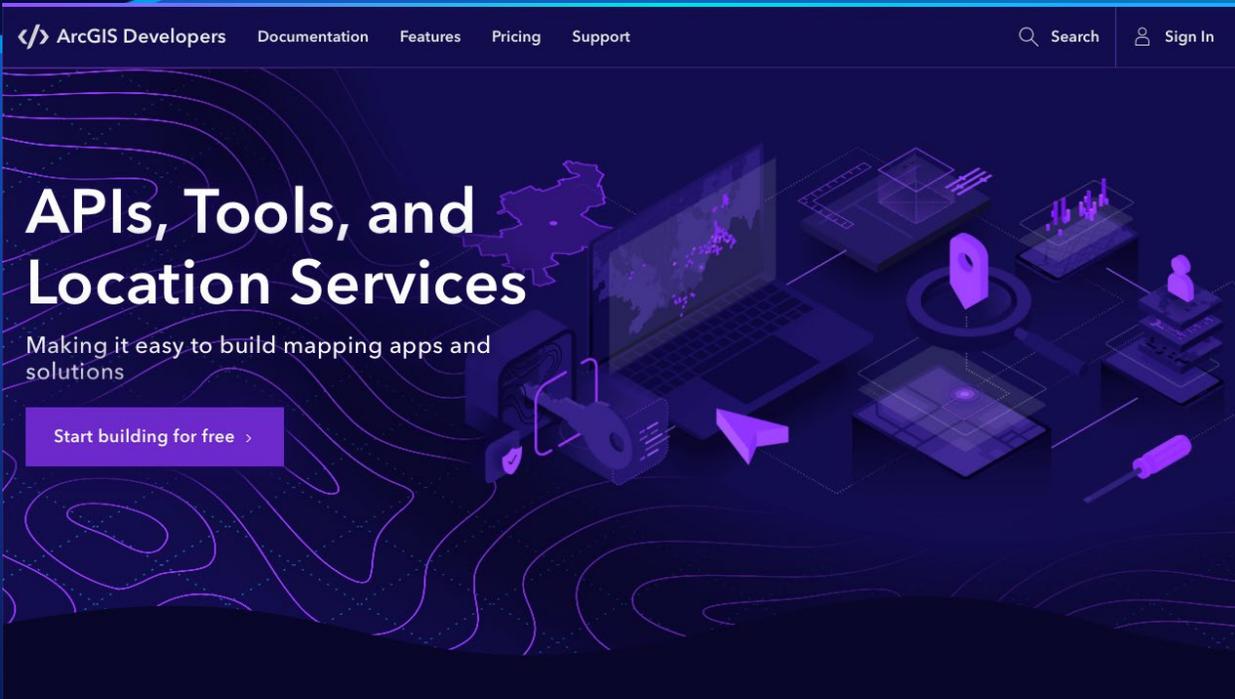
- Download install package
 - XCFramework
 - Xcode integration – API reference
 - Basic starter samples
 - Legal material
- CocoaPods
- **TIP!** - Drag and drop ArcGIS.xcframework into Project Target's **General > Embedded Binaries**



Tips and Information !!

Apple limitation...

- To use ArcGIS Runtime 100.8 or later in the Xcode simulator, you need to target iOS 13 or later, running on Xcode 12 or later.
 - This is now the default for new development.
 - If you fall outside the above requirements, you will need to debug on a physical device.
 - Why?
 - ArcGIS Runtime 100.8 and later use Metal.
 - Other combinations of Xcode and iOS simulator do not support Metal.

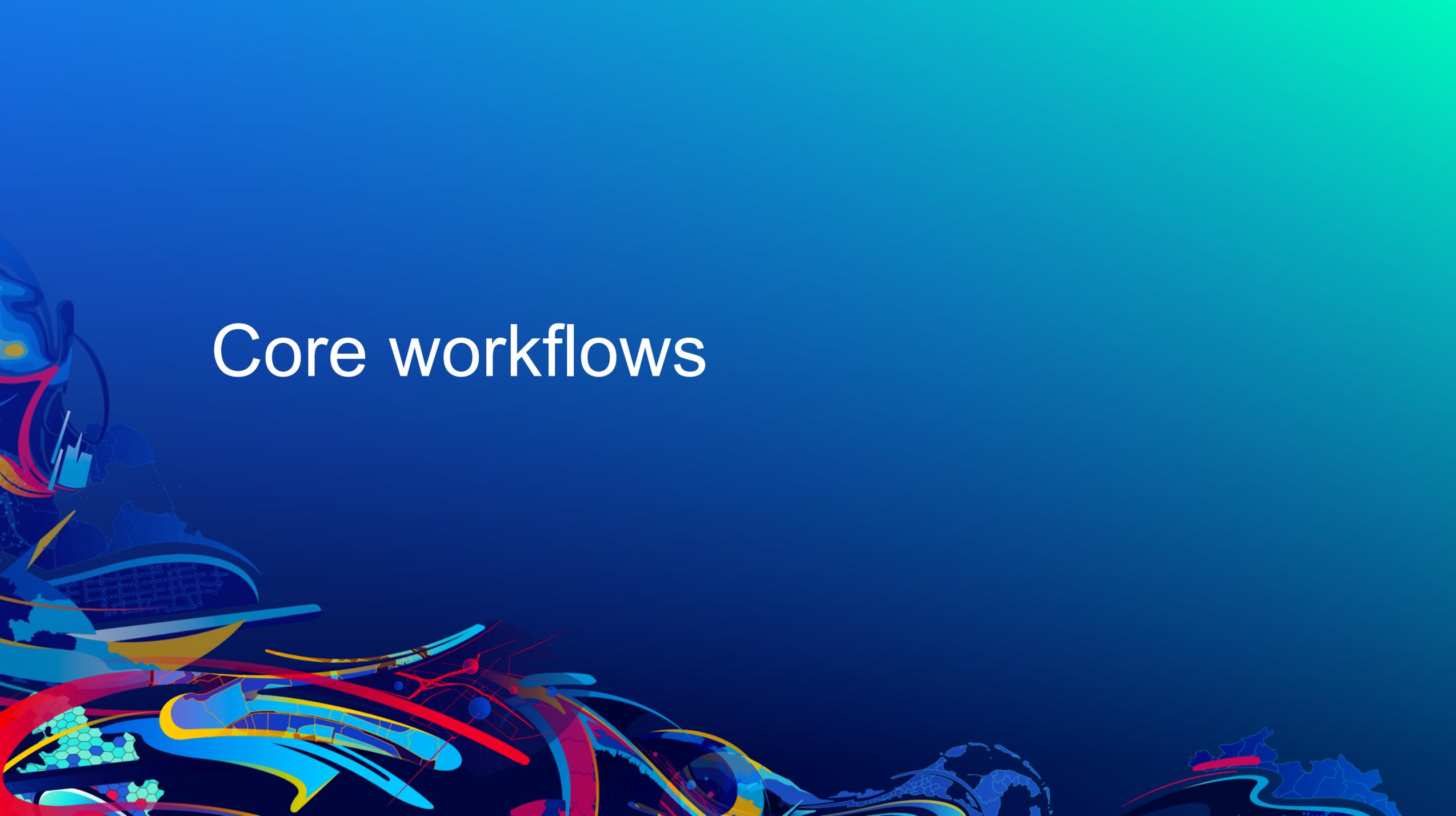


Getting started

[Demo](#)

developers.arcgis.com

Core workflows

The background features a complex, abstract graphic design. It includes a globe on the left side, overlaid with various data patterns such as hexagonal grids and circular nodes. Swirling, ribbon-like shapes in shades of blue, red, and yellow flow across the lower portion of the image, creating a sense of dynamic movement and interconnectedness. The overall aesthetic is modern and technical, suggesting a focus on data science or digital workflows.

View Maps and Scenes

Map

Operational Layers

Basemap

MapView



Scene

Operational Layers

Basemap

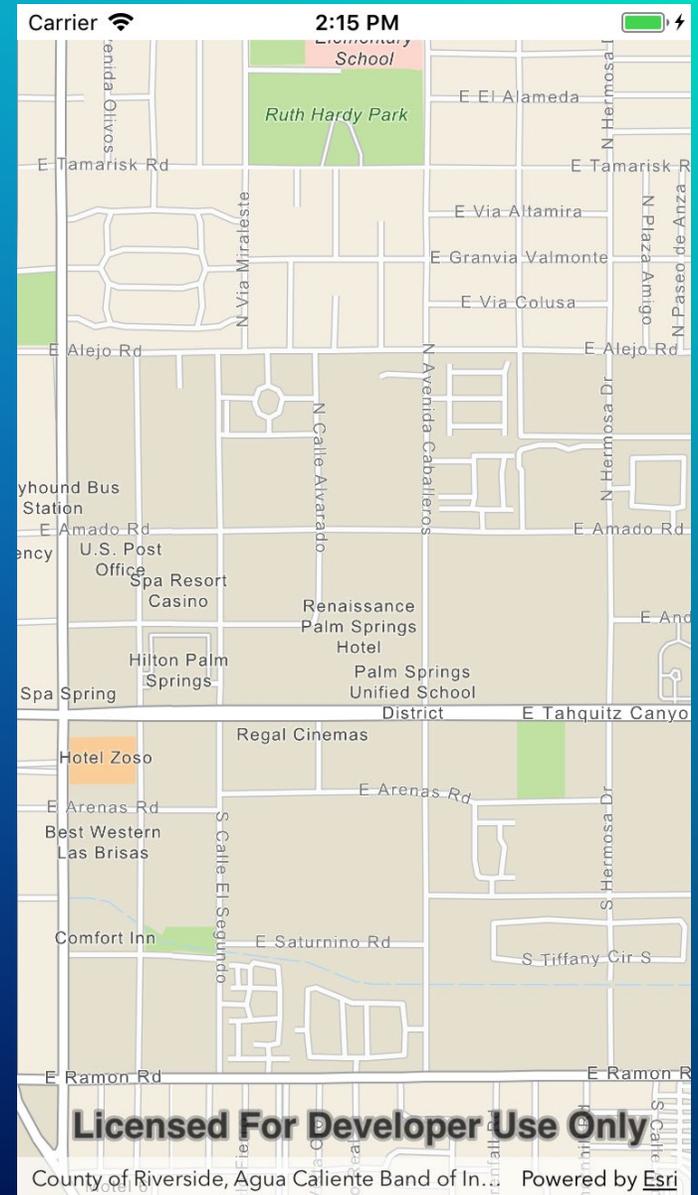
Surface

Sceneview



Hello World

Add a map, and geocode



Hello World review...

- API keys
- **AGSMap** + **AGSMapView**
- Working with Xcode
 - Storyboards
- Geocoding (**AGSLocatorTask**)
- Viewpoints
- Graphics Overlays and Graphics
- Symbols

Task Pattern

- Create with URL
 - geocoder, route solver, etc.
- Action with params
 - callback block
- Inspect for errors
- Work with results

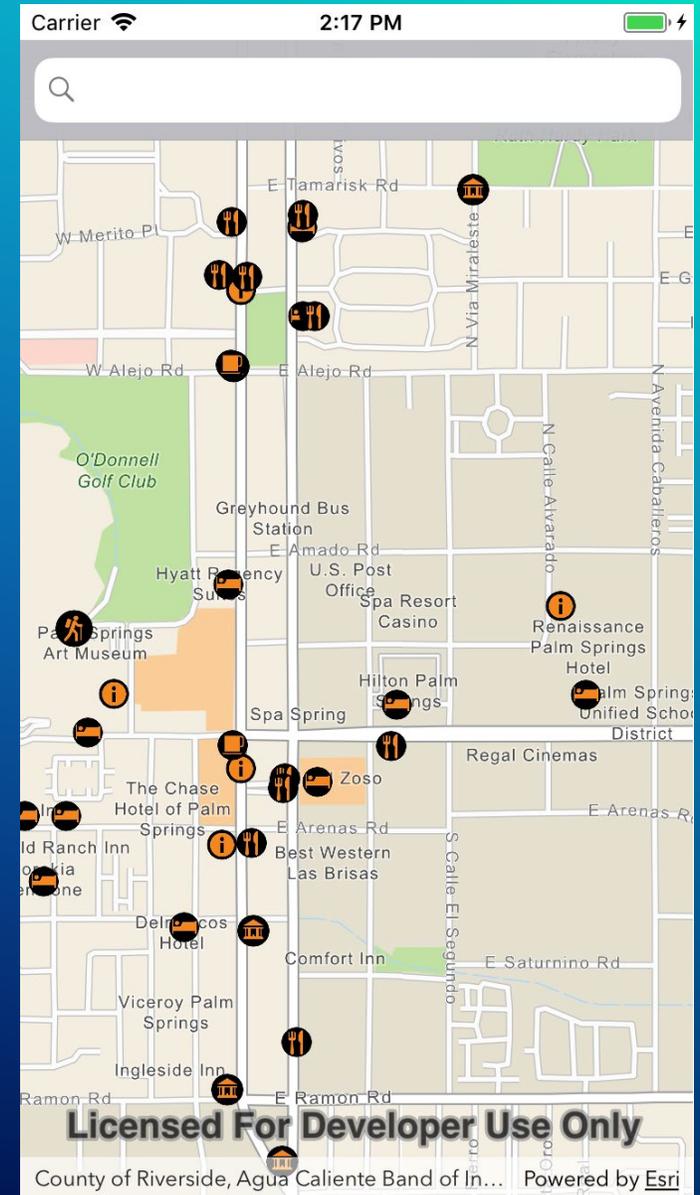
```
locator.geocode(withSearchText: searchText) { (results, error) in
```

Tips and Information !!

- Task and Job patterns and documentation
- Loadable Resources
- Use **AGSLoadObjects()** to wait until multiple things have loaded

Hello World++

Add some data to your map

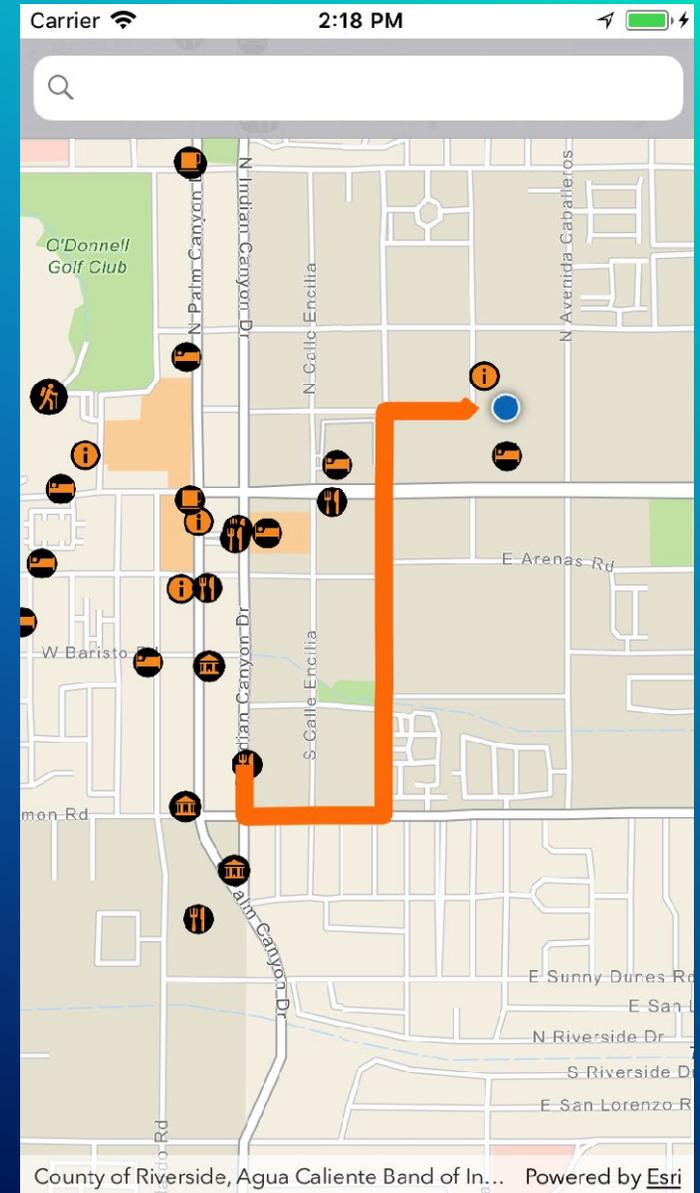


Hello World++ review...

- Add feature layer
 - Table to data source
 - Layer
- Map interaction (`geoViewTouchDelegate`)
- Read feature details
- Callouts

Getting there

You CAN get there from here

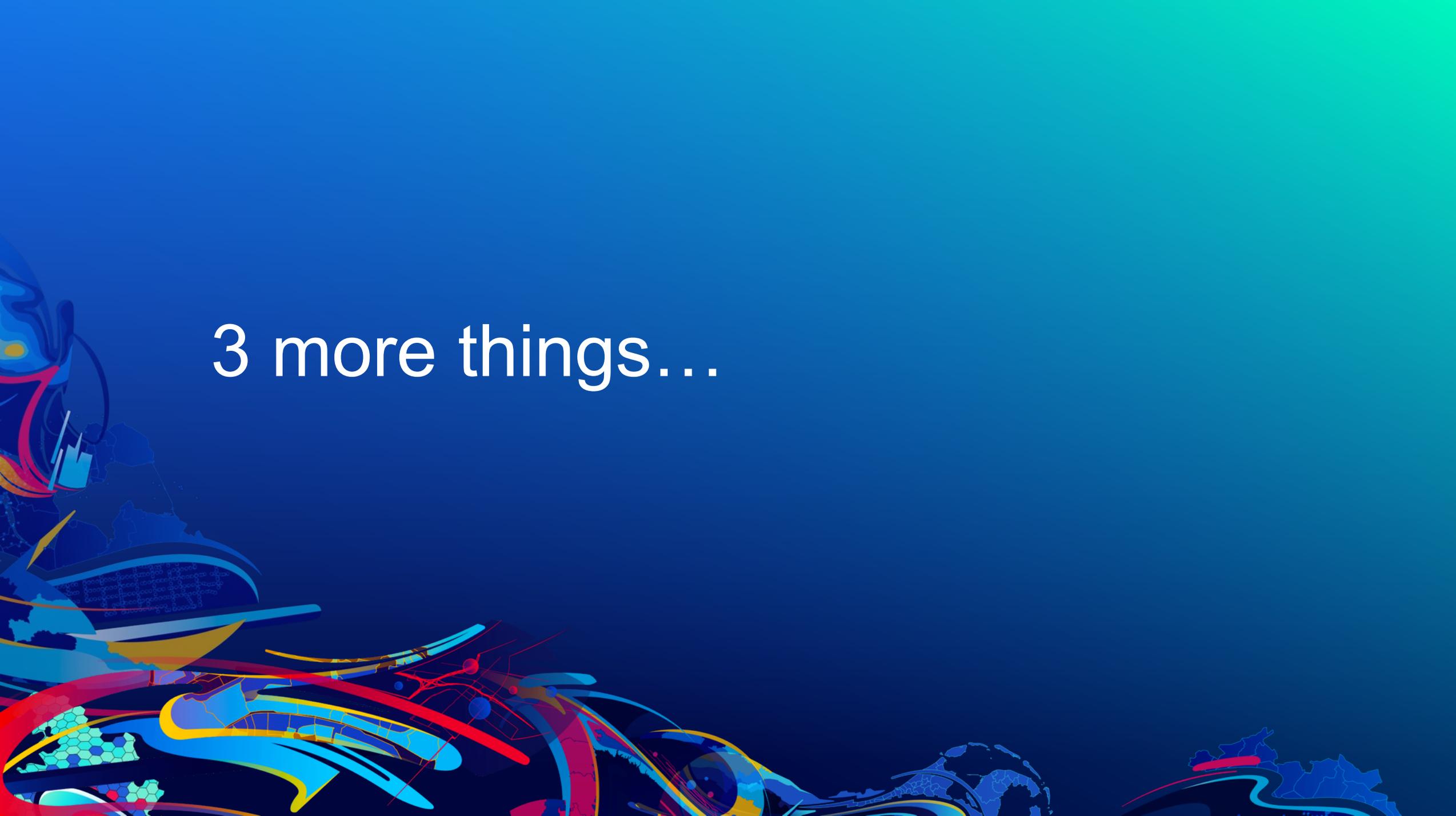


Routing review...

- Routes & Directions (**AGSRouteTask**)
- Geometry builders
- Viewpoint with animation
- Renderers

Tips and Information !!

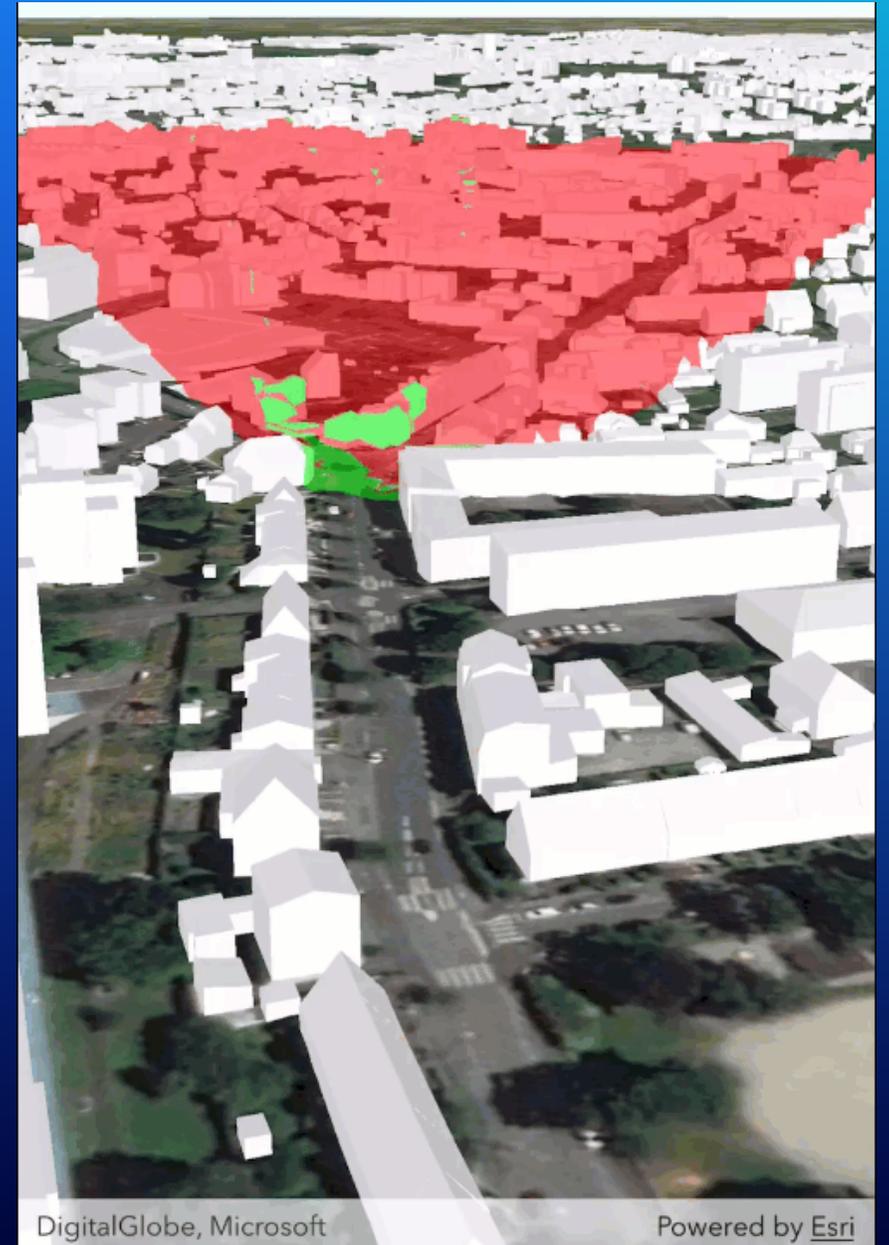
- Use **AGSGPXLocationDataSource** if you want to test your app against recorded GPX tracks
 - https://developers.arcgis.com/ios/api-reference/interface_a_g_s_g_p_x_location_data_source.html
- What version of the SDK am I working with?
 - Extension to AGSBundle to return version of Runtime.
 - <https://github.com/Esri/data-collection-ios/blob/master/data-collection/data-collection/Extensions/Foundation/Bundle%2BVersion.swift>

The background features a vibrant blue-to-teal gradient. On the left side, there is a complex, abstract graphic design. It includes a stylized globe, a DNA double helix, and various colorful, flowing shapes in shades of red, yellow, and blue. The overall aesthetic is modern and scientific.

3 more things...

#1: 3D scenes and analysis

- Runtime has strong 3D support
- Check out the sample apps
- 3D Analysis
 - Line of sight
 - Viewshed
 - GPU-based – very slick
 - From a feature or a specified location
- 3D apps in the simulator work great
 - Historic: Simulator Open GL emulation 🕒
 - All new! Xcode 11 + Catalina + iOS 13 + **Runtime 100.8** (Metal) 🍷



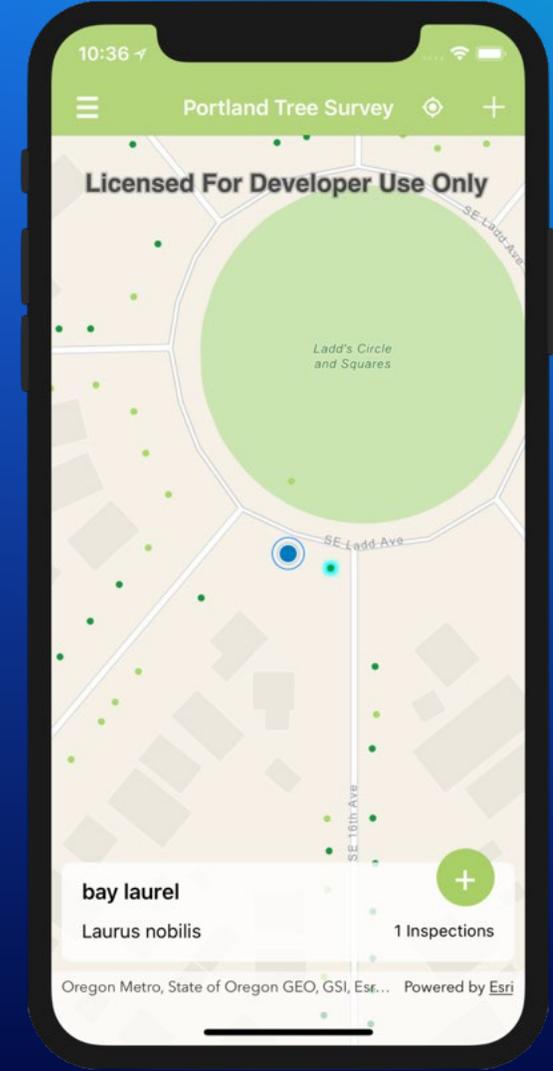
#2: Open Source Apps

- Best practices for building real-world apps
- Use as the foundation for your app
- Or just steal what you want
- <https://developers.arcgis.com/documentation/app-templates-and-builders/open-source-apps/data-collection/>
- <https://github.com/Esri/data-collection-ios>

#2.5: Toolkit

Scale Bar, Compass, Legend, AR, etc.

<https://github.com/Esri/arcgis-runtime-toolkit-ios>



#3: Test in the real world

- Test with real people
 - Test on actual devices
 - Test in the field with real network conditions
- 

Summary

- Resources at developers.arcgis.com
- Core Workflows
 - API keys
 - Map and MapView
 - Display features and graphics
 - Geocoding & Routing (Task Pattern)
 - Location Display
 - MapView interaction
 - Geometry Builders
 - Callouts

Download the source for this presentation at:

<https://github.com/esridevsummit/arcgis-runtime-building-ios-apps>



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