

Server-Side Swift

HTTP API's and web pages



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Outline

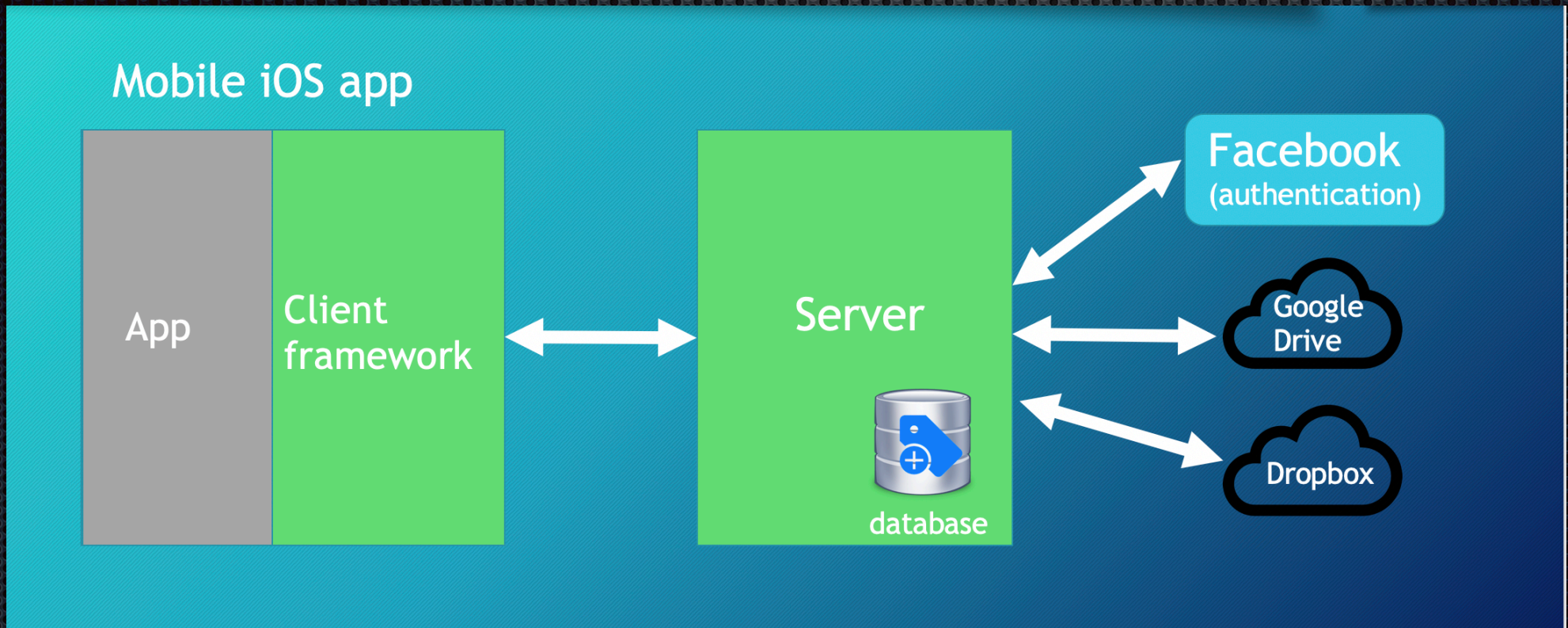
- ✦ SyncServerII and SharedImages— open source project
- ✦ Basics: Swift package manager and Xcode
- ✦ Make your own Swift server for API endpoints
- ✦ Make your own Swift server for web pages

SyncServerII and SharedImages

- SyncServerII
 - User-cloud data sync and safe-sharing
 - Uses IBM Kitura framework
- SharedImages
 - Example app using SyncServerII
 - Planned for Apple app store release late this year, or early next year

<https://github.com/crspybits/SyncServerII>

<https://github.com/crspybits/SharedImages>



Architecture: SharedImages + Server

Basics

- ✦ Create a Swift package
- ✦ Build & run that package at command line
- ✦ Build & run that package in Xcode

Create a Swift package

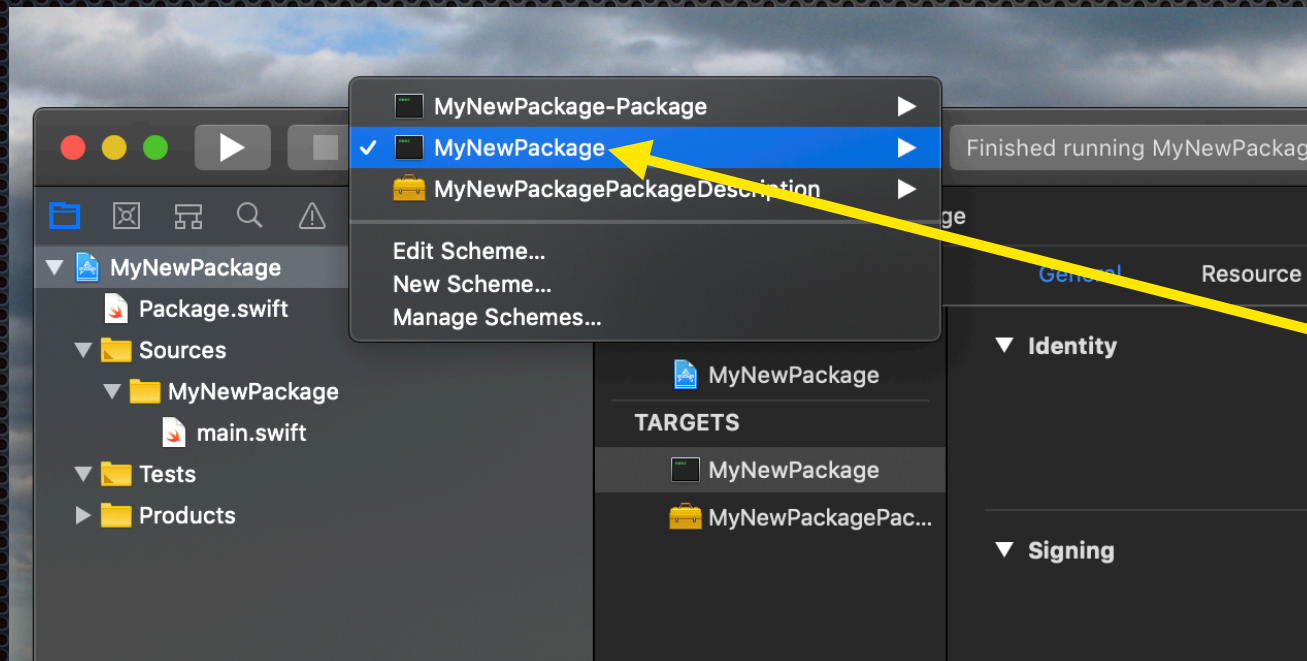
- `swift package init`
 - Executable or library packages
1. Make a directory
 2. Create the package
 3. Build & run

```
MyNewPackage — -bash — 72x13
MacBook-Pro-2:Desktop chris$ mkdir MyNewPackage
MacBook-Pro-2:Desktop chris$ cd MyNewPackage/
MacBook-Pro-2:MyNewPackage chris$ swift package init --type executable
Creating executable package: MyNewPackage
Creating Package.swift
```

```
MyNewPackage — -bash — 87x8
MacBook-Pro-2:MyNewPackage chris$ swift build
Compile Swift Module 'MyNewPackage' (1 sources)
Linking ./build/x86_64-apple-macosx10.10/debug/MyNewPackage
MacBook-Pro-2:MyNewPackage chris$ ./build/x86_64-apple-macosx10.10/debug/MyNewPackage
Hello, world!
MacBook-Pro-2:MyNewPackage chris$
```

Using Xcode

- ❖ `swift package generate-xcodeproj`
 - ❖ Note that every time you regenerate it, you lose settings in Xcode



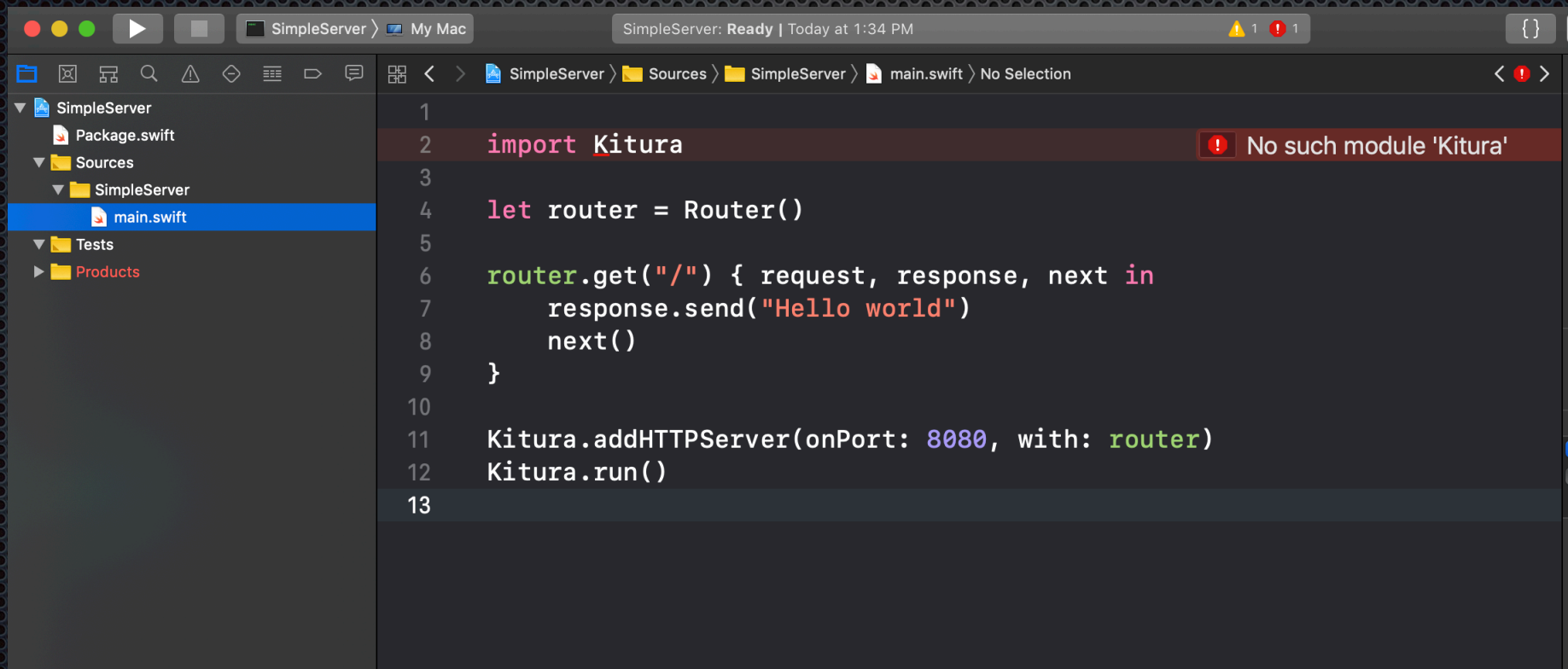
To run, select this

IBM Kitura

- ✦ <https://github.com/IBM-Swift/Kitura>
- ✦ “Embedded” web server
 - ✦ Something like Node.js (not like Apache/PHP)
- ✦ Multi-threaded web server
- ✦ Other frameworks available too

Let's make an endpoint

- ✦ e.g., <http://localhost:8080/HelloWorld>
- ✦ Drop in sample code from <https://www.kitura.io>



```
1
2 import Kitura
3
4 let router = Router()
5
6 router.get("/") { request, response, next in
7     response.send("Hello world")
8     next()
9 }
10
11 Kitura.addHTTPServer(onPort: 8080, with: router)
12 Kitura.run()
13
```

No such module 'Kitura'

(<https://github.com/crspypybits/SimpleServer.git>)

Dependencies

- Changes needed for Package.swift
 - A package dependency
 - A target dependency
- Secret sauce: regenerate Xcode project
 - `swift package generate-xcodeproj`
- You may also need to remove the .build directory and try again

Let's serve a web page

- Going to use Kitura's "Stencil" templates
 - <https://github.com/IBM-Swift/Kitura-StencilTemplateEngine>
 - <http://masteringswift.blogspot.com/2017/02/getting-started-with-kitura-stencil.html>
- Same basic server as before, but with an additional Swift package, and a new endpoint

(<https://github.com/crspylbits/SimpleWeb.git>)

Serve pages from Views directory

```
<ServerRepositoryName>
├── Package.swift
├── Sources
│   └── Application
│       └── Application.swift
└── Views
    └── Example.stencil
```

See also

- <https://www.kitura.io>
 - <https://www.kitura.io/guides/gettingstarted.html>
 - <https://github.com/IBM/swift-kitura-helloworld>
 - <https://developer.ibm.com/swift/2017/10/30/codable-routing/>
- <https://swift.org/package-manager/>
 - <https://github.com/apple/swift-package-manager/tree/master/Documentation>
- <https://www.ralfebert.de/ios-examples/xcode/ios-dependency-management-with-swift-package-manager/>