INTRODUCTION TO VAPOR AND SERVER-SIDE SWIFT

VAPOR

INTRODUCTION

- Varied background - currently at BBC as a Mobile Developer
- Twitter, Github, Slack - @0xTim
- Twitter, Github - @brokenhandsio

QUESTIONS

Please Interrupt Me!

GETTING STARTED

SPM

- Swift Package Manager
- It’s the future! - one day…
- Manage dependencies, build and test

Package.swift

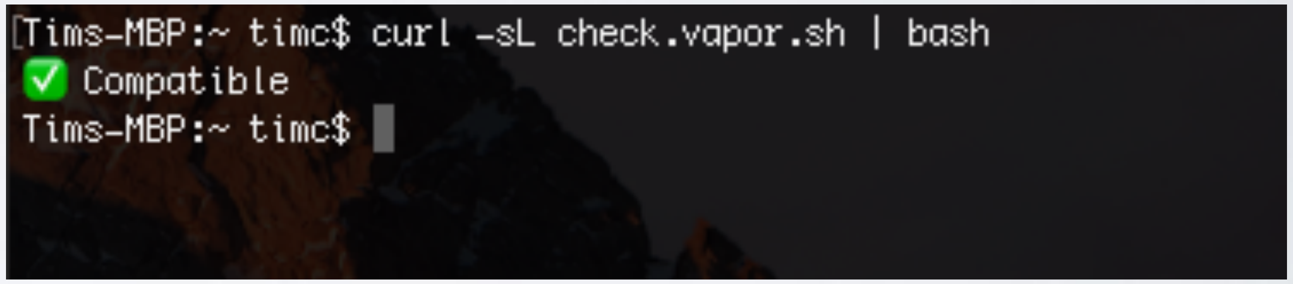
```
import PackageDescription

let package = Package(
    name: "SteamPressExample",
    dependencies: [
        .Package(url: "https://github.com/vapor/vapor.git", majorVersion: 1),
        .Package(url: "https://github.com/brokenhandsio/VaporSecurityHeaders.git",
majorVersion: 0),
        .Package(url: "https://github.com/brokenhandsio/SteamPress", majorVersion: 0),
        .Package(url: "https://github.com/vapor/postgresql-provider", majorVersion: 1),
    ],
    exclude: [
        "Config",
        "Database",
        "Localization",
        "Public",
        "Resources",
        "Tests",
    ]
)
```

PROJECT LAYOUT

- SPM project layout constraints
- Source in `Sources` directory
- Tests in `Tests` directory

VAPOR TOOLBOX

1. Install Swift - `curl -sL swift.vapor.sh/ubuntu | bash`
2. Check Compatability



```
Tims-MBP:~ timc$ curl -sL check.vapor.sh | bash
✅ Compatible
Tims-MBP:~ timc$
```

3. Install Toolbox - `curl -sL toolbox.vapor.sh | bash`
4. Check - `vapor --help`

DESIGN

- MVC
- Models
- Controllers
- Providers
- Middleware

DROPLET

- The web server for your app
- Is what everything interacts with
- Add controllers, routes, providers

CONTROLLERS

- Deal with input (requests) and provide output (responses)
- Register routes
- Handle request
- Return response

FLUENT

- Vapor's ORM
- Deals with `Node` types
- Abstracts away Database layer
- Make your models conform to the `Model` protocol

MODELS

- The ‘things’ in your app
- For example Users, Blog Posts, Blog Tags
- Even get URL type safety:

```
drop.get("users", BlogUser.self) { request, user in
    let info = user.getUserInfo()
}
```

MIDDLEWARE

- Intercept requests and responses
- Add response headers e.g. VaporSecurityHeaders
- Check request headers e.g. users are logged in

PROVIDERS

- Easy way to add functionality to your app
- In SteamPress - Paginator
- SteamPressExample - SteamPress, PostgreSQL,

LEAF

- Vapor’s templating engine
- Pass in parameters of type `Node`
- Can do `#if()`, `#loop()`, `#embded` etc
- Easily extensible

AUTHENTICATION

- Built-In Auth package using Turnstile
- Support for OAuth2, Facebook/Google, Web authentication
- JWT Package from Nodes
- Easily extensible

CONFIG

- Via command line or Config directory
- Can have different levels for production/testing/secrets
- JSON files

DEPLOYING

- In built support for Heroku with a custom buildpack
- Can run on any Ubuntu Server or Docker
- Generally behind Nginx

DEMO

TOP TIPS

- Command Line Use
- Test on Linux **from the start**
- Ignore Xcode

GOTCHAS

- Testing on Linux

LinuxMain.swift

```swift
import XCTest

@testable import SteamPressTests

XCTMain([
    testCase(BlogPostTests.allTests),
    testCase(BlogControllerTests.allTests),
     ...
])
```

allTests

```
class BlogControllerTests: XCTestCase {
    static var allTests = [
        ("testBlogIndexGetsPostsInReverseOrder", testBlogIndexGetsPostsInReverseOrder),
        ("testBlogIndexGetsAllTags", testBlogIndexGetsAllTags),
        ("testBlogIndexGetsDisqusNameIfSetInConfig", testBlogIndexGetsDisqusNameIfSetInConfig),
        ("testBlogPostRetrievedCorrectlyFromSlugUrl", testBlogPostRetrievedCorrectlyFromSlugUrl),
        ("testDisqusNamePassedToBlogPostIfSpecified", testDisqusNamePassedToBlogPostIfSpecified),
        ("testAuthorView", testAuthorView),
        ("testAuthorViewGetsDisqusNameIfSet", testAuthorViewGetsDisqusNameIfSet),
        ("testTagView", testTagView),
        ("testTagViewGetsDisquqNameIfSet", testTagViewGetsDisquqNameIfSet),
    ]

    ...
}
```

GOTCHAS

- Testing on Linux
- Regenerate your project
- Foundation on Linux
- Swift's Type Inference

iOS TO SERVER SIDE

- 1 user on 1 device to many users from many devices on many servers
- Feedback loop is a lot quicker
- Storage
- Security

FINAL THOUGHTS

- Code and Slides at https://github.com/0xTim/vapor-introduction
- Get on Slack qutheory.slack.com #help especially
- Check out the documentation - https://vapor.github.io/documentation/
- Ray Wenderlich - https://videos.raywenderlich.com/screencasts
- SteamPress - https://github.com/brokenhandsio/SteamPress
- Get involved

QUESTIONS