


iOS Development with BUCK #2

Issarapong

Growth Session #12 - February 15-16 2018



- BUCK is build system developed and used by facebook.
- BUCK encourages the creation of small, reusable modules consisting of code and resources
- BUCK support many languages & platform (iOS, Android, JAVA)
- BUCK can build iOS Application without Xcode Project File

iOS Project With BUCK

- `./BUCK`
 - Manage the resource & build roles for current project.
- `./buckconfig`
 - Manage project settings.
- `*.pbxproj` / `*.workspace` is not needed.

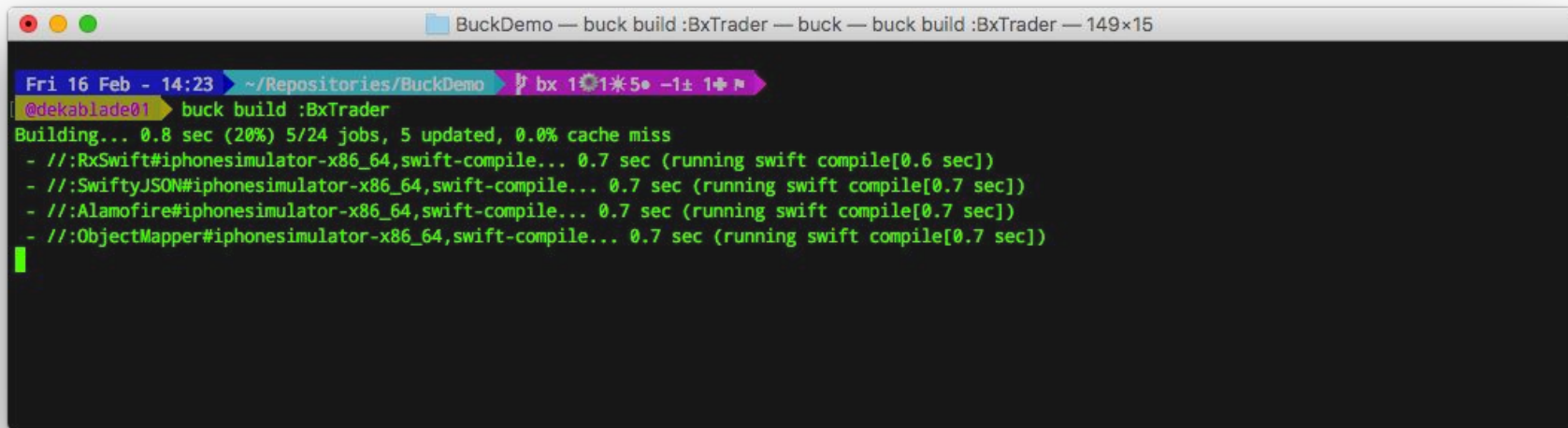
iOS Project With BUCK

- `./BUCK`
 - Manage the resource & build roles for current project.
- `./.buckconfig`
 - Manage project settings.
- `*.pbxproj` `*.workspace` is not required for build.

Previous Achievement

Previously on BUCK

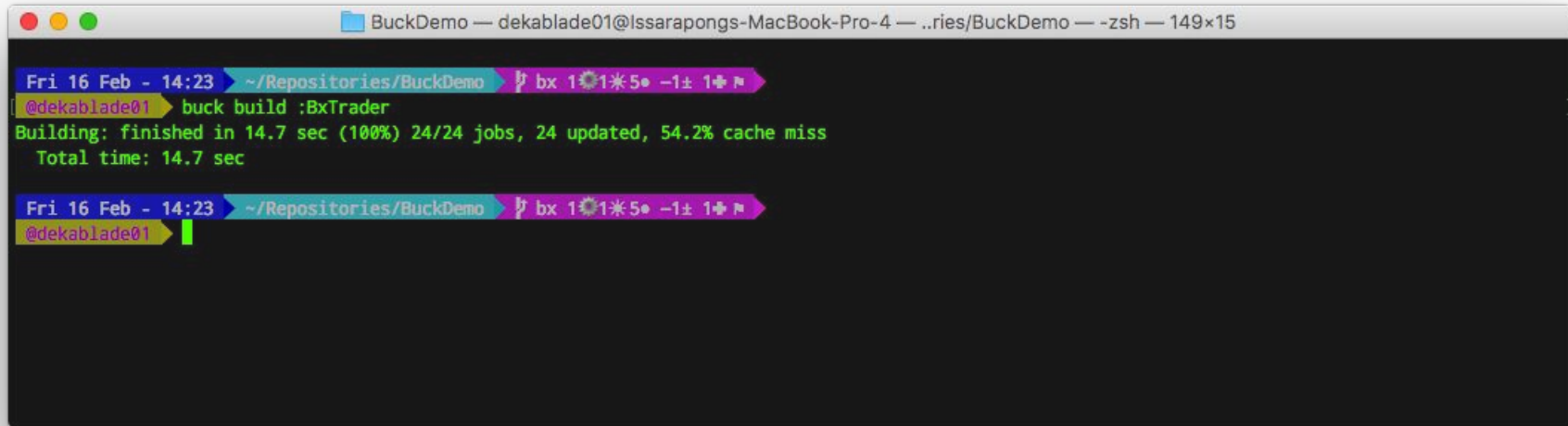
Parallel building

A terminal window titled "BuckDemo — buck build :BxTrader — buck — buck build :BxTrader — 149x15". The prompt is "@dekablade01". The command "buck build :BxTrader" has been executed. The output shows "Building... 0.8 sec (20%) 5/24 jobs, 5 updated, 0.0% cache miss" followed by four parallel build tasks for RxSwift, SwiftyJSON, Alamofire, and ObjectMapper, each taking 0.7 seconds to compile.

```
Fri 16 Feb - 14:23 ~/Repositories/BuckDemo bx 1 1 5 -1 1
@dekablade01 buck build :BxTrader
Building... 0.8 sec (20%) 5/24 jobs, 5 updated, 0.0% cache miss
- //:RxSwift#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.6 sec])
- //:SwiftyJSON#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.7 sec])
- //:Alamofire#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.7 sec])
- //:ObjectMapper#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.7 sec])
```

Previously on BUCK

Build to temporary files



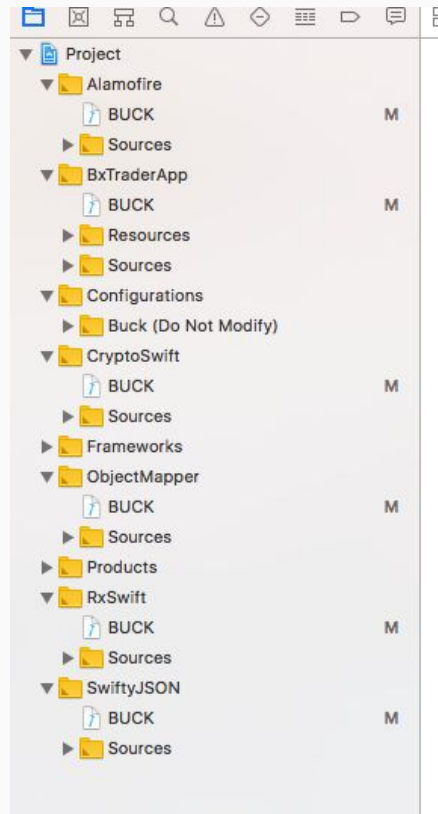
```
BuckDemo — dekablade01@Issarapongs-MacBook-Pro-4 — ..ries/BuckDemo — zsh — 149x15

Fri 16 Feb - 14:23 ~/Repositories/BuckDemo bx 1 1 5 -1 1
@dekablade01 buck build :BxTrader
Building: finished in 14.7 sec (100%) 24/24 jobs, 24 updated, 54.2% cache miss
Total time: 14.7 sec

Fri 16 Feb - 14:23 ~/Repositories/BuckDemo bx 1 1 5 -1 1
@dekablade01
```

Previously on BUCK

Generated wired `.pbxproj`



New Achievements

iOS Project With BUCK

- `./BUCK`
 - `apple_asset_catalog()`
 - Define `catalog_name`
 - Contain eg : `*.xcassets`
 - `apple_bundle()`
 - Define `target_name`
 - Contain : `apple_binary()`, `Info.plist`
 - `apple_binary()`
 - Define : `binary_name`
 - Eg : `./**/*.swift`, `apple_asset_catalog()`, `apple_library()`

iOS Project With BUCK

- ./BUCK
 - apple_package()
 - Define : package_name
 - Contain eg : apple_bundle()
 - apple_library()
 - Define : Pods
 - Contain eg : ./Pods/**/
 - *.swift, *.h, *.m, *.mm

iOS Project With BUCK

- `./buckconfig`
 - `[apple]`
 - Eg : `iphone_simulator_target_sdk_version`, ...
 - `[project]`
 - Eg : IDE Settings (default IDE, Restarting IDE, ...), ...
 - `[cxx]`
 - Eg : `default_platform`, `arc`, ...
 - `[swift]`
 - Eg : `swift compiler version`, ...

App Size

Achievements

Building

⇒ .app is now exportable !



Achievements

Building

⇒ app built with Xcode is larger



Reduced App Size

27.4 MB VS 34.2 MB

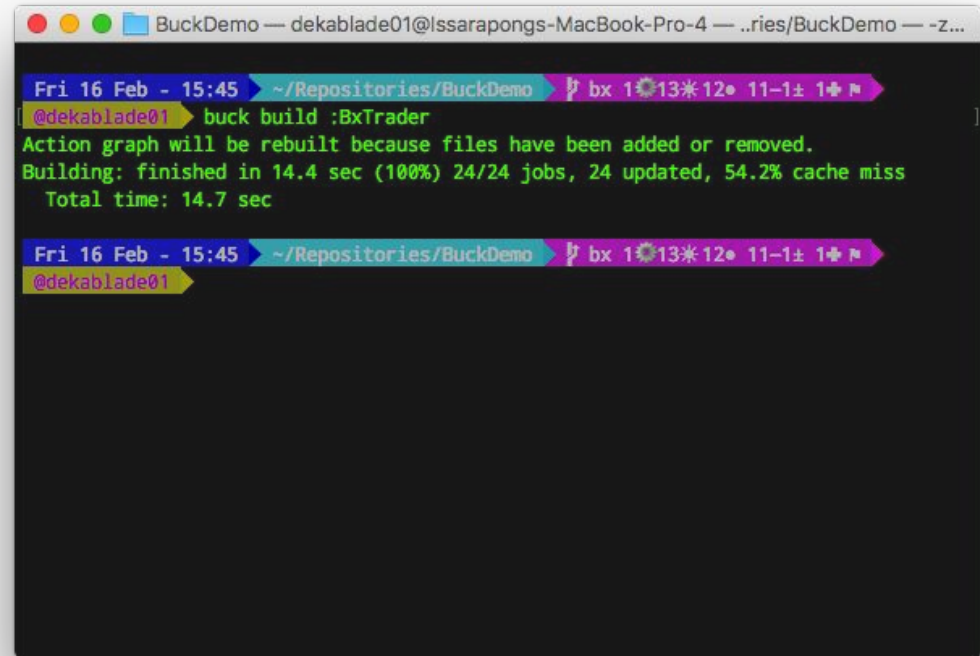
20 % decrease in .app size!!

Building Time

Achievements

Building Time

⇒ Builds the app in 14.7 secs



```
BuckDemo — dekablade01@Issarapongs-MacBook-Pro-4 — ..ries/BuckDemo — -z...  
Fri 16 Feb - 15:45 ~/Repositories/BuckDemo bx 1 13 12 11-1 1  
@dekablade01 buck build :BxTrader  
Action graph will be rebuilt because files have been added or removed.  
Building: finished in 14.4 sec (100%) 24/24 jobs, 24 updated, 54.2% cache miss  
Total time: 14.7 sec  
Fri 16 Feb - 15:45 ~/Repositories/BuckDemo bx 1 13 12 11-1 1  
@dekablade01
```

Achievements

Building Time

⇒ xcbuild takes 83 secs

```
BuckDemo — dekablade01@Issarapongs-MacBook-Pro-4 — ../ries/BuckDe...
[15:16:15]: ▶ Touching BxTrader.app
[15:16:15]: ▶ Signing /Users/dekablade01/Library/Developer/Xcode/DerivedData/B
xTrader-fyngtovkgehmuhgmgxbapplpyilr/Build/Products/Debug-iphonesimulator/BxTr
ader.app
[15:16:16]: ▶ Build Succeeded

+-----+-----+-----+
|               fastlane summary               |
+-----+-----+-----+
| Step | Action                | Time (in s) |
+-----+-----+-----+
| 1    | default_platform      | 0            |
| 2    | xcodebuild             | 83           |
+-----+-----+-----+

[15:16:16]: fastlane.tools finished successfully 🎉
[15:16:16]: WARNING: fastlane requires your locale to be set to UTF-8. To lear

Fri 16 Feb - 15:43 ~/Repositories/BuckDemo bx 1 🌞 13*12 11-1± 1♣ ♠
@dekablade01
```

Reduced build time

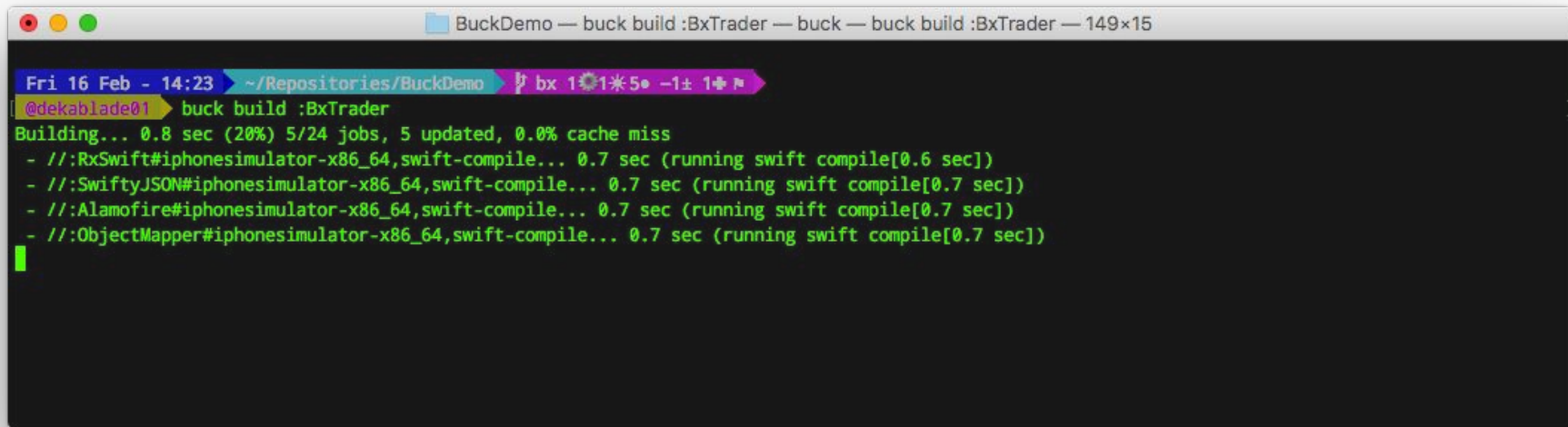
14.7 sec VS 83 sec

5.64x faster build time !!

WHAT THE BUCK !! ?

BUCK

BUCK can build resources parallel up to CPU Thread (4 Threads on this machine)

A screenshot of a macOS terminal window. The title bar reads "BuckDemo — buck build :BxTrader — buck — buck build :BxTrader — 149x15". The terminal shows a command prompt for user @dekablade01 at Fri 16 Feb - 14:23 in the directory ~/Repositories/BuckDemo. The command "buck build :BxTrader" has been executed. The output shows the build progress: "Building... 0.8 sec (20%) 5/24 jobs, 5 updated, 0.0% cache miss". It then lists four parallel jobs, each taking 0.7 seconds for swift-compile: RxSwift, SwiftyJSON, Alamofire, and ObjectMapper, all for the iphone simulator on x86_64 architecture.

```
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@dekablade01 buck build :BxTrader
Building... 0.8 sec (20%) 5/24 jobs, 5 updated, 0.0% cache miss
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- //:Alamofire#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.7 sec])
- //:ObjectMapper#iphonesimulator-x86_64,swift-compile... 0.7 sec (running swift compile[0.7 sec])
```

- BUCK know ...
 - What to build (use)
 - What to not build (unused)
 - Even you dependencies, BUCK will build only what to use from dependencies.
 - What change ? (Build only change)
- Less app size & Less build time

Achievements

- Xcode command
- Xcode project structure
- BUCK structure & BUCK configurations
 - Where to place resources in BUCK
 - How to config build settings in .buckconfig
 - Swift
 - Binary
 - ARC, non ARC
- BUCK with CocoaPods

PROS & CONS

BUCK

- PROS
 - Reduced app size
 - Reduced build time 🦅
 - Less GIT conflicts (.pbxproj)
- CONS
 - Can't build 2 project at the same time
 - The first project build will be just gone i.e. not in Trash (untrackable)
 - Require deep knowledge of Xcode project structure
 - Arc & non arc
 - Framework & Dynamic framework
 - Bride-Header
 - Binary Frameworks
 - Core Data
 - etc



xcodebuild

- PROS
 - Can build multiple project at the same time and even the same project
- CONS
 - Larger app size
 - Longer build time
 - High GIT conflicts (.pbxproj)



DEMO

Thanks!

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