

GOFORE

# React Native CI/CD

GOFORE

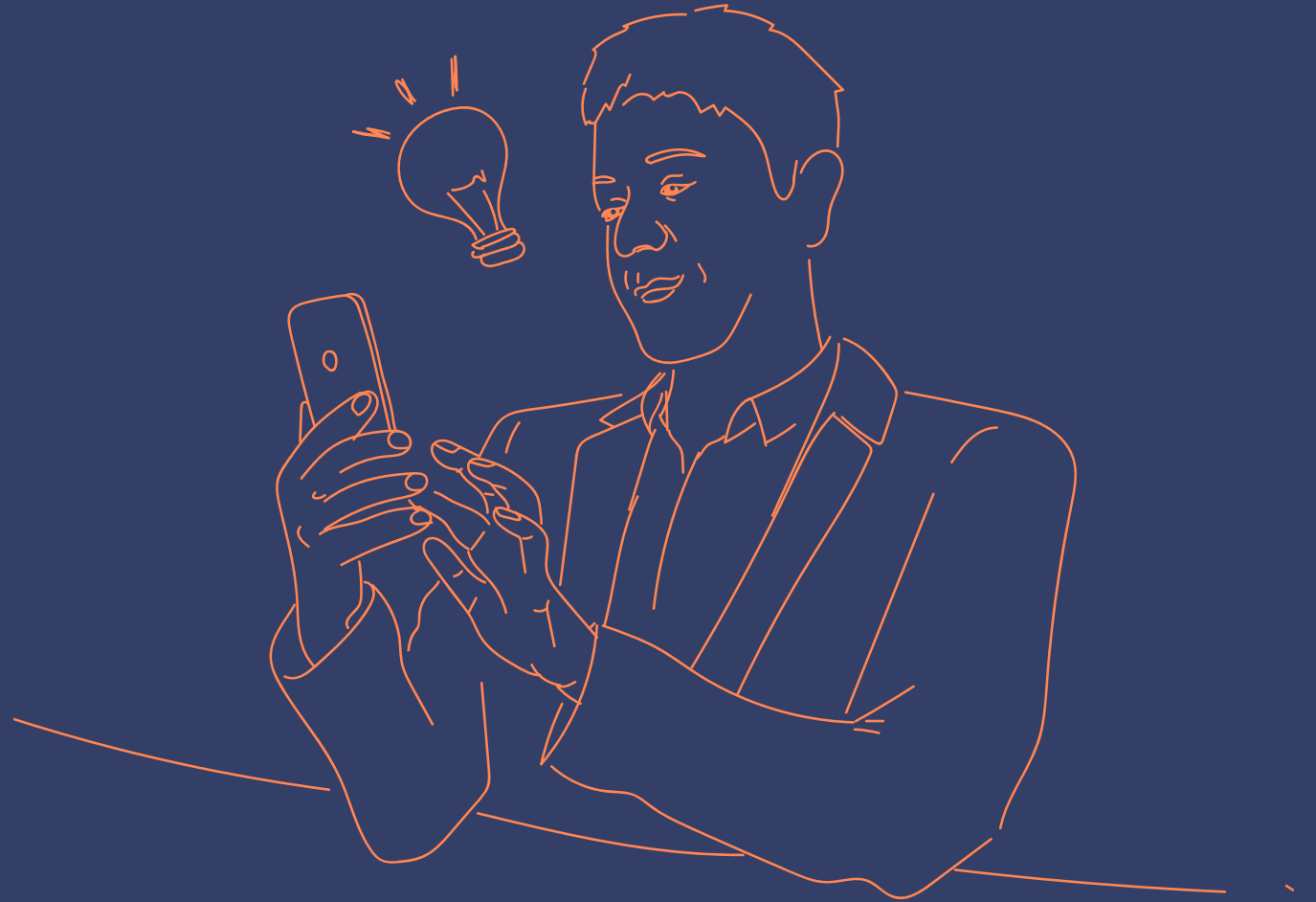




**Dev**



# Customer



# Juha Linnanen

---

Head of mobile development  
at GOFORE



**Twitter** @pillar15



**Github** @eduplus





# Automate automation

---

1

Continuous  
integration

2

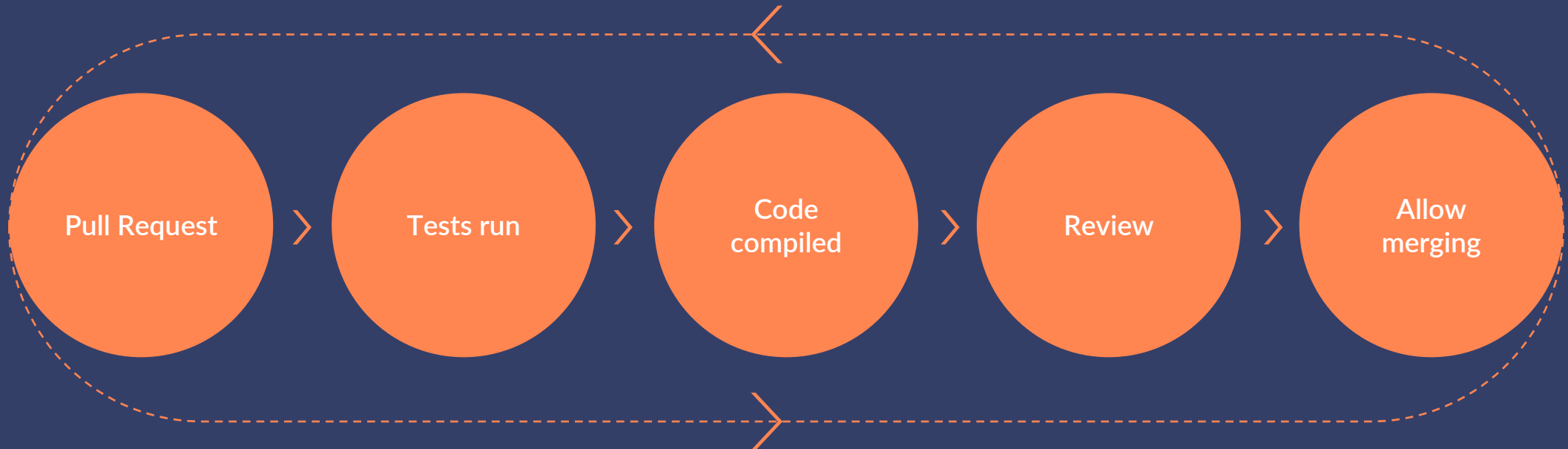
Continuous  
deployment



# Continuous Integration

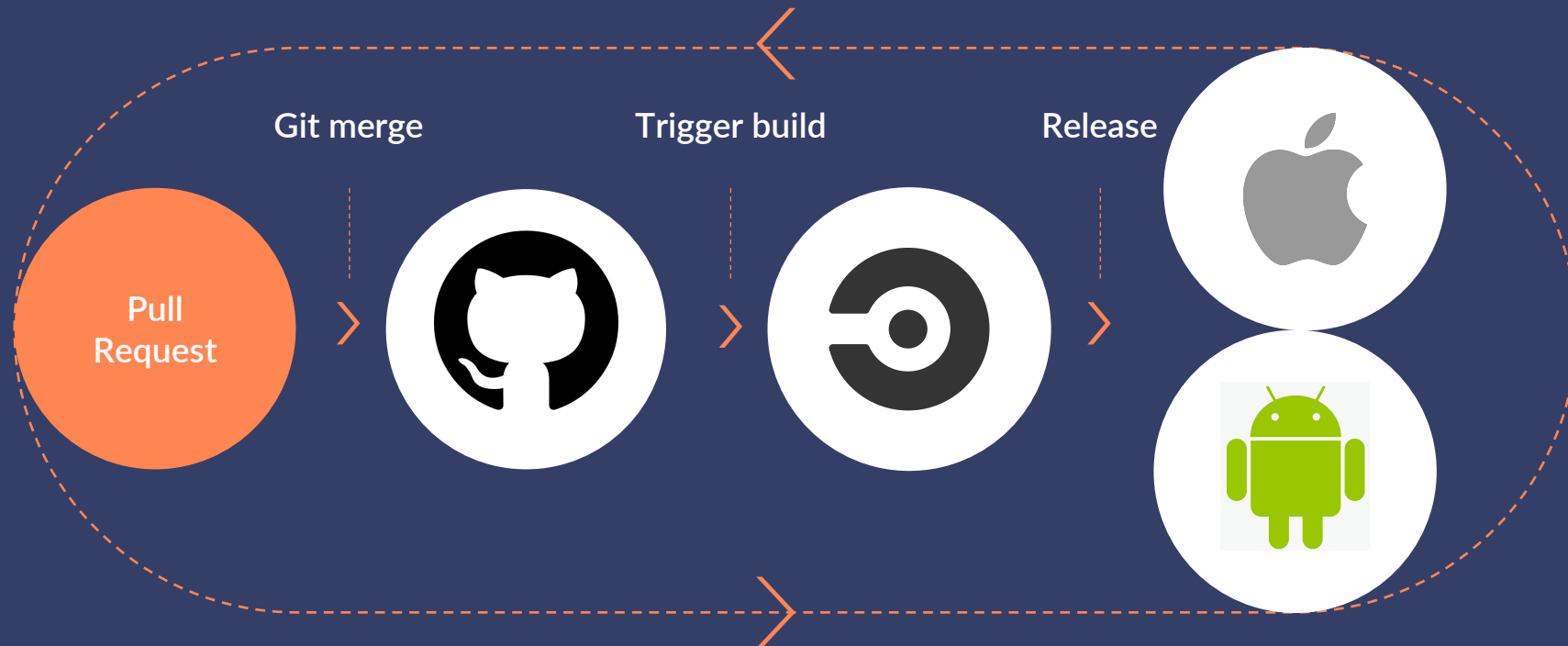
---

- Merging code in small increments
- Goal is to prevent integration problems



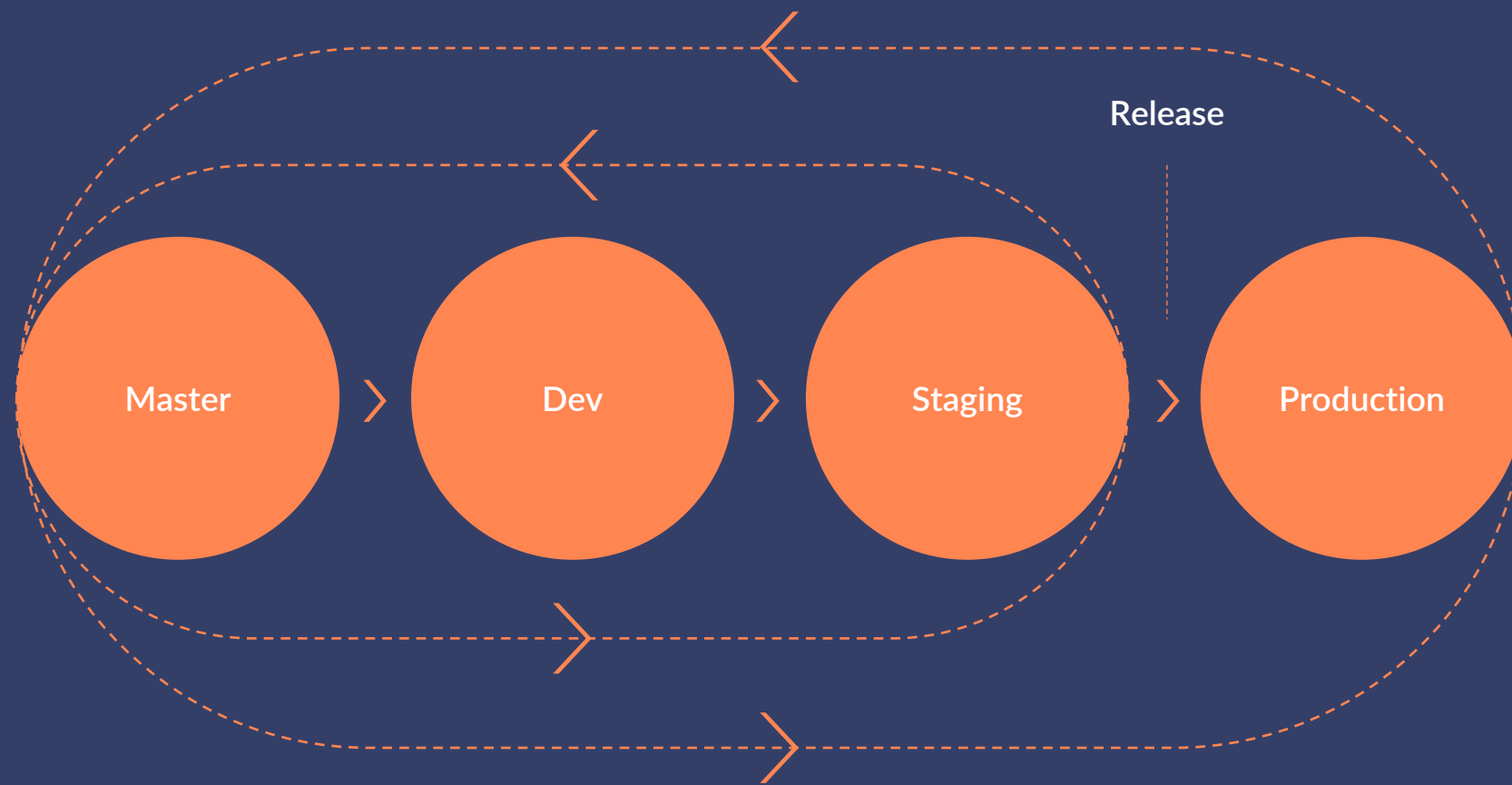
# Continuous deployment

- Automated deployment
- Produces end product



# Build flavors

- Dev
- Staging
- Production



# Cloud services

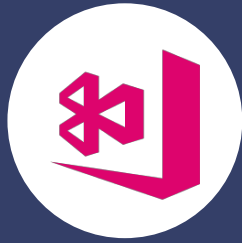
---



Circle CI



Travis



AppCenter



Gitlab CI/CD



Nevercode



Bitrise

# Benefits

---

1



Automated  
repeatable process

2



Quick  
Feedback loop

3



Time saving &  
Cost reduction

# React Native CI/CD





# Setup process - Steps

---

1

Integrate  
CI/CD  
Server to  
version  
control

2

Configure  
CI/CD  
Server  
pipelines

3

Add build  
flavors to  
app

4

Sharing  
secrets

5

Setup app  
signing &  
certificates

6

Handle  
version  
numbering

7

Icon badges  
for dev and  
staging  
builds

8

Deployment  
to app store



1

2

3

4

5

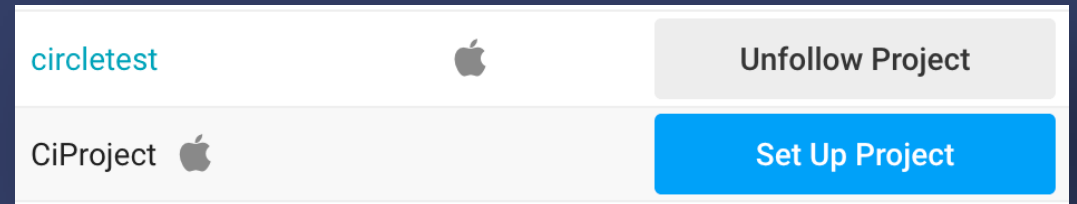
6

7

8

# Integrate CI/CD Service to version control

- Cloud service specific
- CircleCI follow button



1      **2**      3      4      5      6      7      8

---

# Configure CI/CD Server pipelines

- Config file
- CircleCI `.circleci/config.yml`



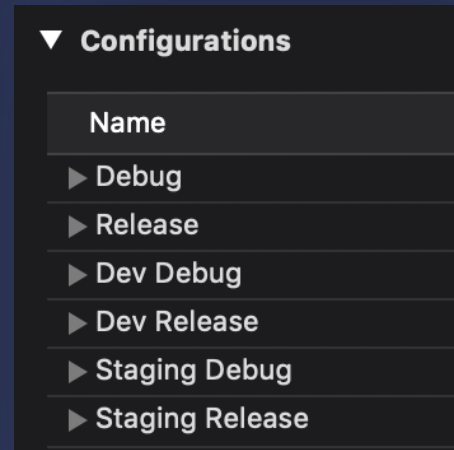
```
workflows:  
  version: 2  
  node-android-ios:  
    jobs:  
      - test  
  
      - android:  
        requires:  
          - test  
        filters:  
          branches:  
            ignore:  
              - master  
              - staging  
  
      - build_deploy_android_dev:  
        filters:  
          branches:  
            only: master  
  
      - build_deploy_android_staging:  
        filters:  
          branches:  
            only: staging
```

1 2 **3** 4 5 6 7 8

# Implementing build flavors

- Android: product flavors
- iOS: Schemes + Build configurations
- iOS: react-native-schemes-manager

```
flavorDimensions "env"
productFlavors {
    dev {
        dimension "env"
        applicationIdSuffix ".dev"
        versionNameSuffix "-DEV"
    }
    staging {
        dimension "env"
        applicationIdSuffix ".staging"
        versionNameSuffix "-STAGING"
    }
    prod {
        dimension "env"
    }
}
```



1 2 3 4 5 6 7 8

## Implementing build flavors

- React Native: react-native-config
- Env file for each build flavor

```
ENV=DEV  
API_URL=localhost:8080
```

```
import Config from 'react-native-config'  
  
Config.API_URL // 'https://myapi.com'
```



1 2 3 4 5 6 7 8

## Sharing secrets

- Options:
  - 1) Private storage
  - 2) Encoded variables
- CircleCI Environmental Variables

Name	Value
GOOGLE_PLAY_JSON	xxxxfQo=
KEYSTORE	xxxxAYag
KEYSTORE_PROPERTIES	xxxxNDU2
MATCH_PASSWORD	xxxxo4fk



1 2 3 4 5 6 7 8

# Signing & Certificates

- Android: Keystore + keystore property file

```
storePassword=myStorePassword  
keyPassword=mykeyPassword  
keyAlias=myKeyAlias  
storeFile=myStoreFileLocation
```

```
android {  
    signingConfigs {  
        config {  
            keyAlias keystoreProperties['keyAlias']  
            keyPassword keystoreProperties['keyPassword']  
            storeFile file(keystoreProperties['storeFile'])  
            storePassword keystoreProperties['storePassword']  
        }  
    }  
    ...  
}
```





1 2 3 4 **5** 6 7 8

# Signing & Certificates

- iOS: Fastlane match

The screenshot displays the 'Signing' settings in Xcode for five different build configurations: Debug, Release, Dev Debug, Dev Release, and Staging Debug. Each configuration section is expanded, showing the following settings:

- Signing (Debug):** Provisioning Profile: match Development com.gofore.circletest; Team: Solinor Oy; Signing Certificate: iPhone Developer: Solinor Developer (B7LU8AD8...)
- Signing (Release):** Provisioning Profile: match Development com.gofore.circletest; Team: Solinor Oy; Signing Certificate: iPhone Developer: Solinor Developer (B7LU8AD8...)
- Signing (Dev Debug):** Provisioning Profile: match Development com.gofore.circletest.dev; Team: Solinor Oy; Signing Certificate: iPhone Developer: Solinor Developer (B7LU8AD8...)
- Signing (Dev Release):** Provisioning Profile: match Development com.gofore.circletest.dev; Team: Solinor Oy; Signing Certificate: iPhone Developer: Solinor Developer (B7LU8AD8...)
- Signing (Staging Debug):** Provisioning Profile: match Development com.gofore.circletest.sta...; Team: Solinor Oy; Signing Certificate: iPhone Developer: Solinor Developer (B7LU8AD8...)



1 2 3 4 5 6 7 8

# Version numbers

- Auto increment
- Multiple options:
  - 1) Use CI/CD services build number
  - 2) Number of commits

```
build_number = number_of_commits()
gradle(
    task: 'assemble',
    build_type: build_type,
    properties: {
        "VERSION_CODE" => build_number
    }
)
```

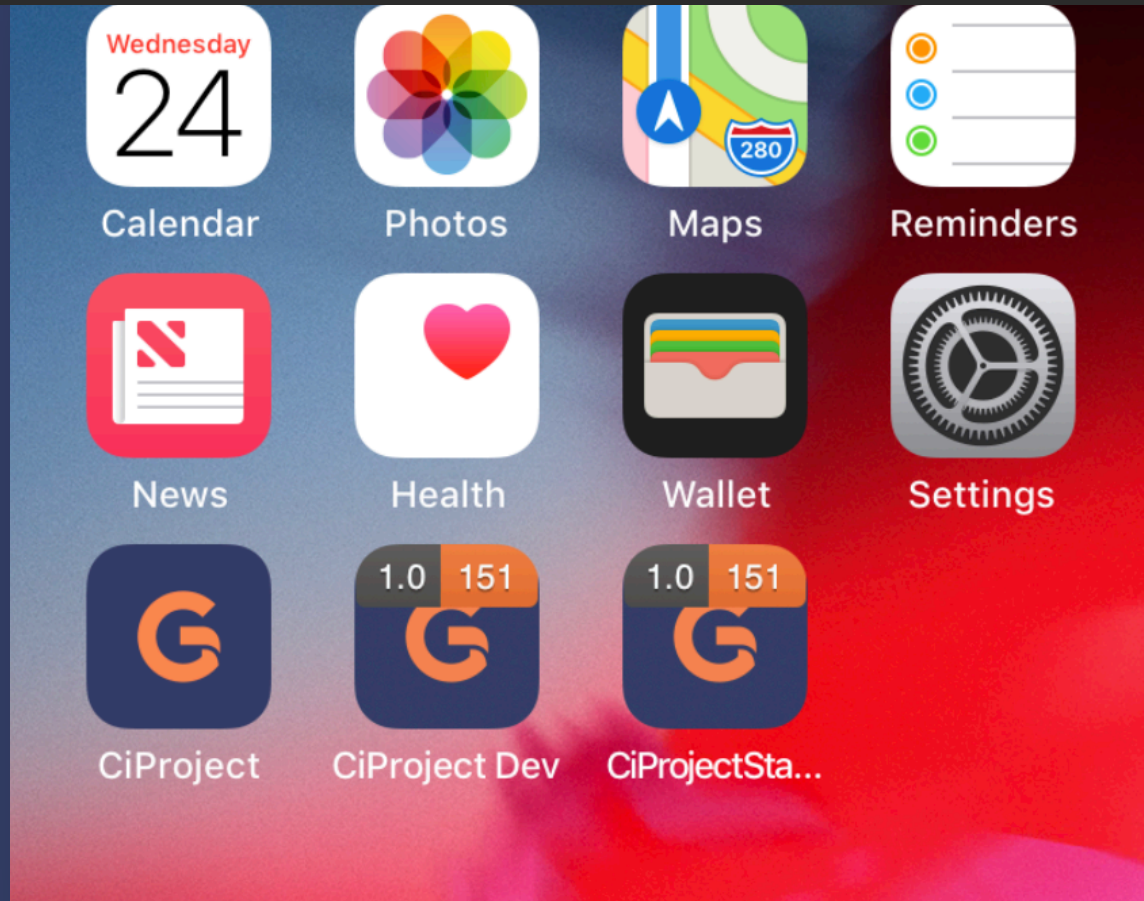
```
build_number = number_of_commits()
increment_build_number(
    build_number: build_number,
    xcodeproj: "CiProject.xcodeproj"
)
```

1 2 3 4 5 6 7 8

# Icon badges

- Fastlane plugin
- Extra info to app icon
- Dev & Staging builds
- Version name + Build number

```
add_badge(  
  shield: "#{IOS_VERSION_NUMBER}-#{ENV["CIRCLE_BUILD_NUM"]}-orange",  
  no_badge: true  
)
```



# Deploying to app stores

- Android: Play store internal test track
- iOS: Testflight
- Fastlane automation

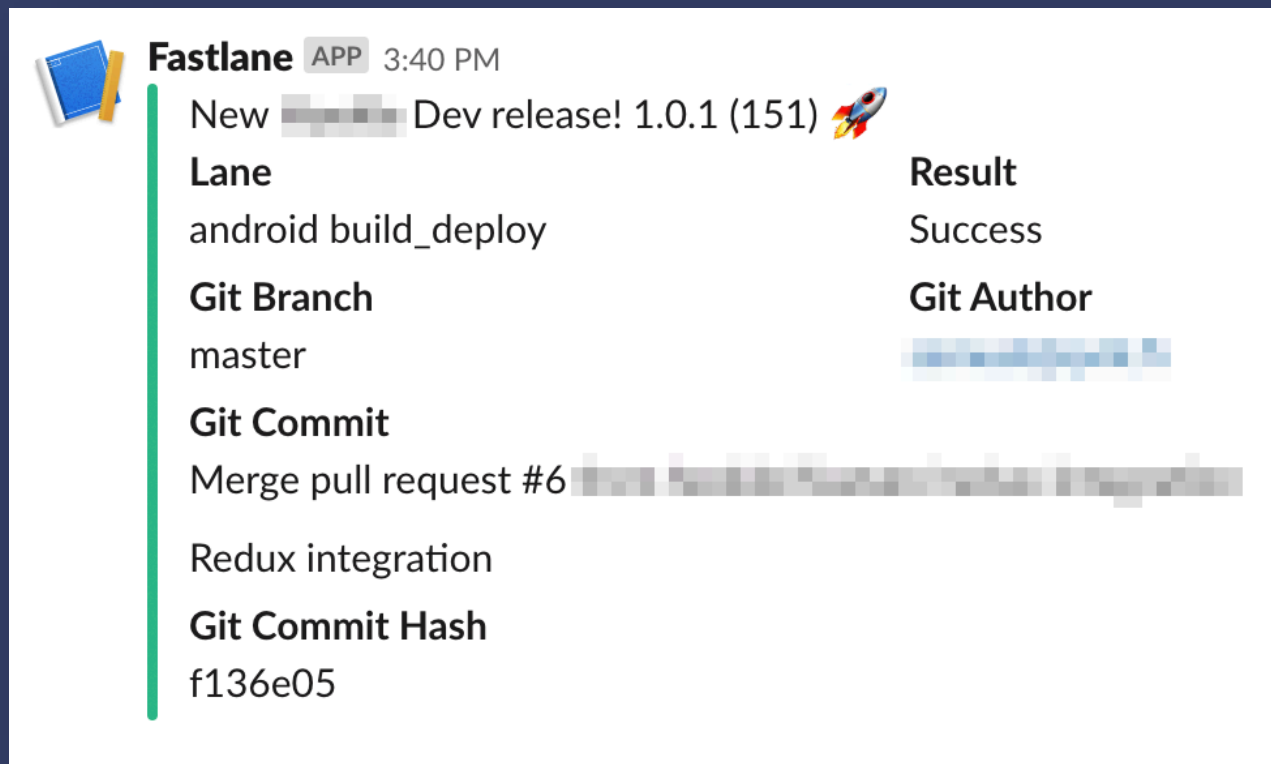
```
upload_to_play_store(  
  package_name: "com.gofore.circletest#{package_name_postfix}",  
  track: 'internal',  
  apk: "./app/build/outputs/apk/#{env}/release/app-#{env}-release.apk"  
)
```

```
upload_to_testflight(wait_processing_interval: 60)
```

1 2 3 4 5 6 7 8

# Slack notification

- Bonus: Notify your team



A Slack notification from the Fastlane app, timestamped 3:40 PM. The notification features a blue folder icon and a green vertical bar on the left. The main text reads: "New [redacted] Dev release! 1.0.1 (151) 🚀". Below this, a table-like structure displays deployment details. The table has two columns: the first column lists attributes (Lane, Git Branch, Git Commit, Git Commit Hash) and the second column lists their values (android build\_deploy, master, Merge pull request #6 [redacted], f136e05). A "Result" column on the right shows "Success".

	Result
<b>Lane</b> android build_deploy	Success
<b>Git Branch</b> master	<b>Git Author</b> [redacted]
<b>Git Commit</b> Merge pull request #6 [redacted]	
	Redux integration
<b>Git Commit Hash</b> f136e05	

# Experience



# Investigation & manual

2 weeks





# Manual

2 days





# DEMO



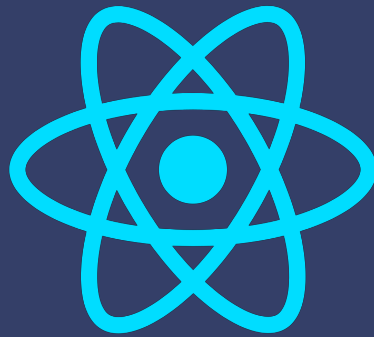
juhalinnanen@Linnamac:~/git/CiProject (master)\$

# Fully automated

2 minutes



# react-native-ci



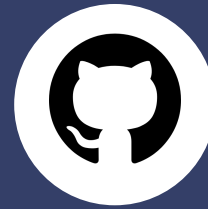
[github.com/solinor/react-native-ci](https://github.com/solinor/react-native-ci)

# Implementation

---

- CLI built with Gluegun
- Opinionated stack
- Contribute to offer other choices

! Experimental



Github



Circle CI



Flavors:  
Dev, staging, production



TestFlight



Play store  
Internal track



# Thank you!



## GOFORE

Juha Linnanen

Twitter @pillar15

Github @eduplus

