Petr
Evsikov

CI ⚡ CD

(continuous integration / continuous delivery)

Upload an app to Google Play

1. Create Google Play Console Account
2. Pay one time Registration Fee $25
3. Create application and fill necessary fields
4. Generate `.aab` file `cd android && ./gradlew bundleRelease`
5. ???
6. PROFIT

Upload an app to App Store Connect

1. Enroll your Apple Developer Account
2. Buy a 1-year certificate for $99
3. Generate Certificates, Identifiers and Profiles
4. Create application and fill necessary fields
5. Build the archive in Xcode
6. ???
7. PROFIT

Continuous Integration (CI)

Is a way to make sure the software checked in on the mainline is always in a state that can be deployed to users

Benefits

- Catch bugs
- Reduce merge conflicts

Continuous Delivery (CD)

Is the practice of developing software in such a way that you could release it at any time

Benefits

- Incremental updates to applications in production

CI / CD

“There should be two tasks for a human being to perform to deploy software into a development, test, or production environment: to pick the version and environment and to press the “deploy” button.”

David Farley, Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation

CI/CD as a Service

- App Center
- CircleCI
- Bitrise
- ...

App Center

240 build minutes per month = **4 hours**

Up to 30-min per build

Automate UI tests on thousands of real devices (Free 30 day trial)

CircleCI

2,500 free credits*/week = 250 minutes * 4 weeks = 1000 minutes = **16,66 hours**

Run 1 job at a time

Build on Linux and Windows (**no macOS on free plan**)

*Credits are used to pay for your team’s usage based on machine type and size, and premium features like Docker layer caching.

What do I get with 2,500 free credits / week?
Users on our Free plan can build up to 250 minutes per week using their 2,500 credits.

On the Free plan, users can build with the Medium compute option (2 vCPUs with 4 GB of memory) on Linux machines, which uses 10 credits per minute.

Bitrise

Run 1 job at a time

10 min / each build

2 team members

200 builds / month = 200 * 10 = 2000 minutes = **33,33 hours**

macOS VM available

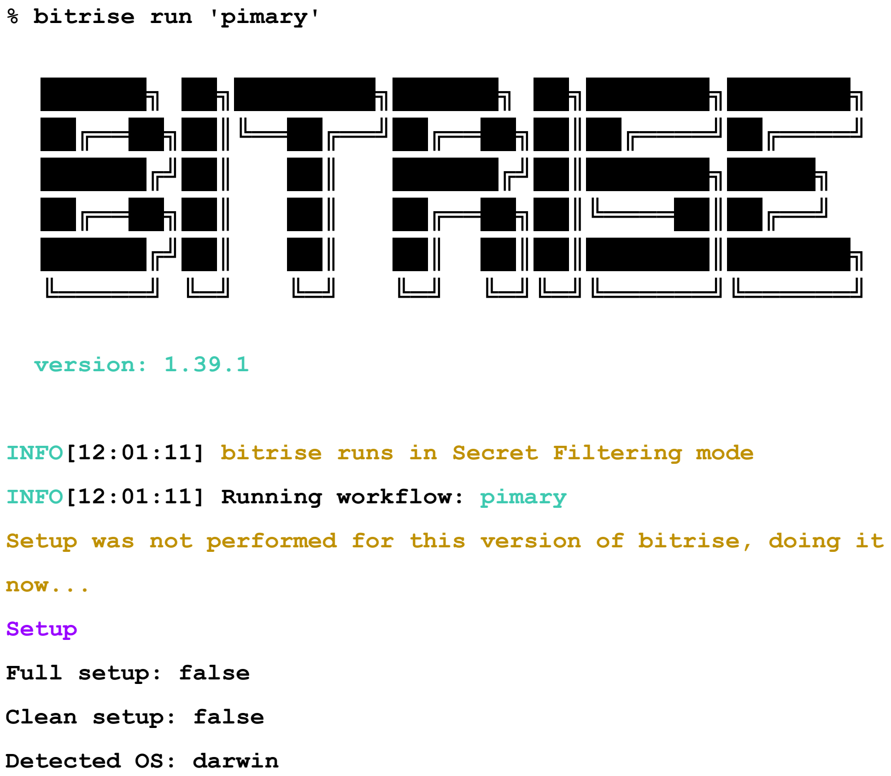
Bitrise benefits

Run the same config locally

Download your bitrise.yml and use our open source

CLI locally to debug a build or to run your automations

from the terminal.



```
% bitrise run 'pimary'

  version: 1.39.1

INFO[12:01:11] bitrise runs in Secret Filtering mode
INFO[12:01:11] Running workflow: pimary
Setup was not performed for this version of bitrise, doing it
now...
Setup
Full setup: false
Clean setup: false
Detected OS: darwin
```

Bitrise benefits

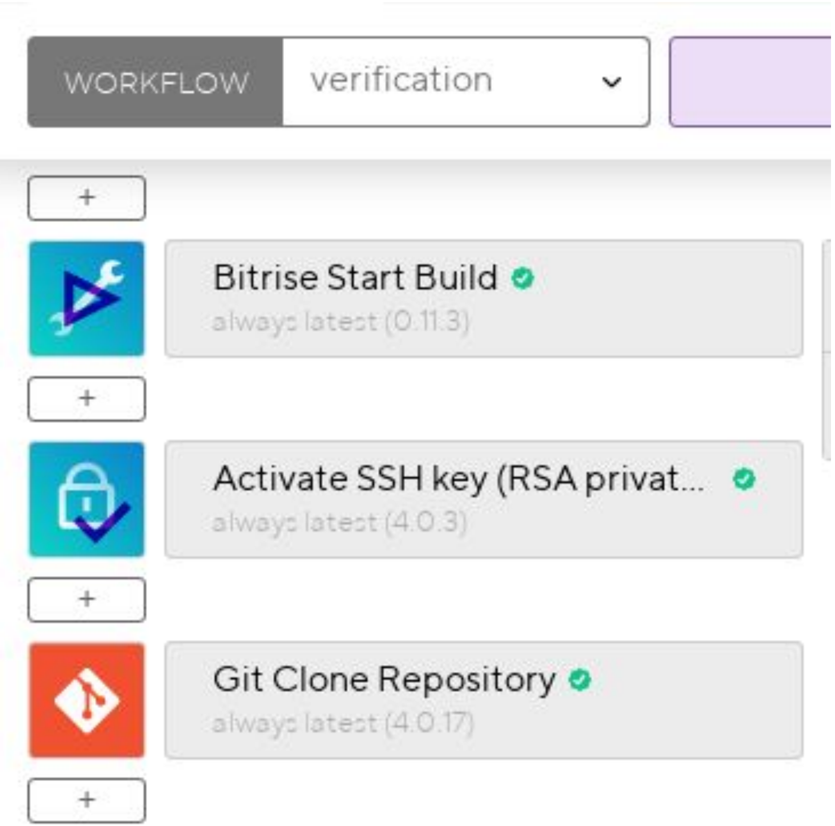
180+ integrations

Use steps from library to create powerful workflows, and if you’re missing an integration, add it to **our open source library**. https://www.bitrise.io/integrations/steps

Scripting

You can do scripting, but you don’t have to. Sometimes you need something custom, we get it. Drop in a Script step anywhere in your workflow and run any command or install any tool that you need. Don’t worry **you have full control over the virtual machine.**

Bitrise benefits

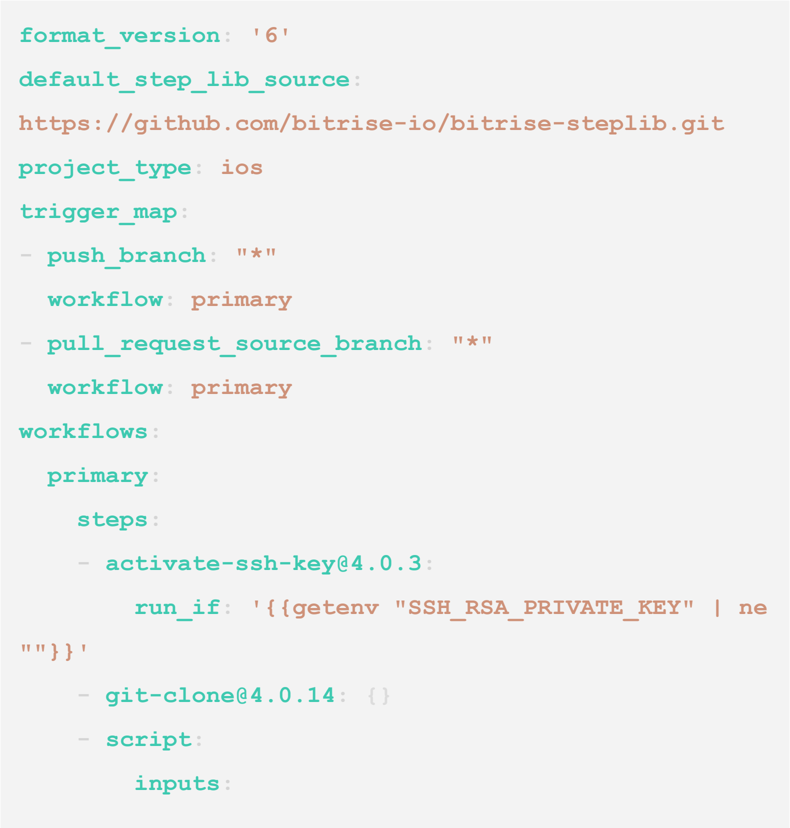


WORKFLOW verification

Bitrise Start Build ✓
always latest (0.11.3)

Activate SSH key (RSA privat... ✓
always latest (4.0.3)

Git Clone Repository ✓
always latest (4.0.17)



```
format_version: '6'
default_step_lib_source:
https://github.com/bitrise-io/bitrise-steplib.git
project_type: ios
trigger_map:
- push_branch: "*"
  workflow: primary
- pull_request_source_branch: "*"
  workflow: primary
workflows:
  primary:
    steps:
    - activate-ssh-key@4.0.3:
        run_if: '{{getenv "SSH_RSA_PRIVATE_KEY" | ne
""}}'
    - git-clone@4.0.14: {}
    - script:
        inputs:
```

Register an App ID

1. Open https://developer.apple.com/account/resources/identifiers/list
2. Click + button
3. Register a New Identifier App IDs
4. Continue
5. Fill all necessary fields
6. Confirm your App ID
7. Register
8. Make sure your app ID in the list

Create Provisioning Profile (App Development)

1. Open https://developer.apple.com/account/resources/profiles/add
2. Click + button
3. Select iOS App Development
4. Continue
5. Select an App ID
6. Continue
7. Select Certificates
8. Continue
9. Select Devices
10. Continue
11. Download

Create Provisioning Profile (App Store)

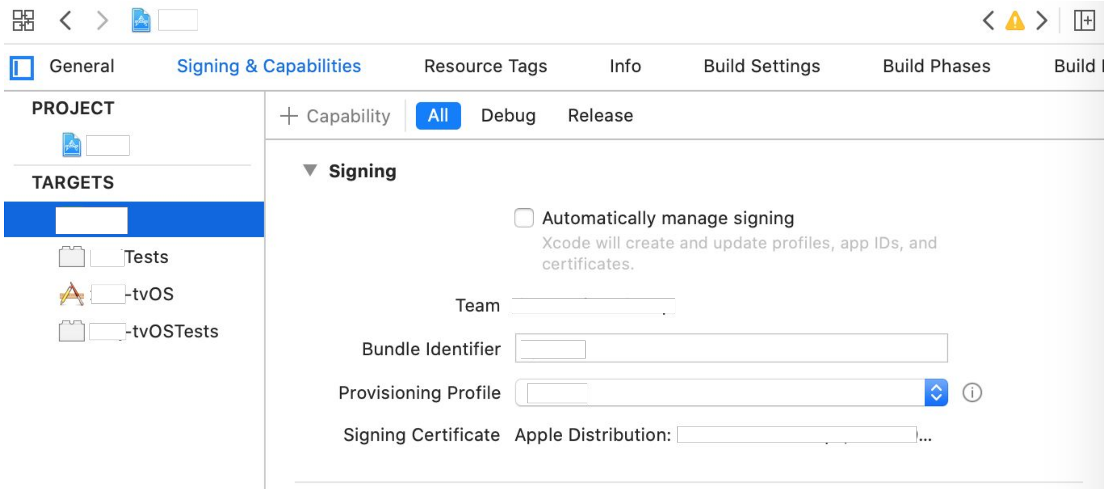
1. Open https://developer.apple.com/account/resources/profiles/add
2. Click + button
3. Select iOS App Development
4. Continue
5. Select an App ID
6. Continue
7. Select Certificates
8. Continue
9. Enter Provisioning Profile Name
10. Continue
11. Download

Create new App

1. Open https://appstoreconnect.apple.com/WebObjects/iTunesConnect.woa/ra/ng/app
2. Click + button
3. Click New App
4. Fill the form
5. Click create

Setup project

1. Open XCode with your project
2. Select main target
3. Tap Signing and Capabilities
4. Disable automatically manage signing
5. Enter your Bundle Identifier
6. Select your provision profile



□ Automatically manage signing

Xcode will create and update profiles, app IDs, and certificates.

Team

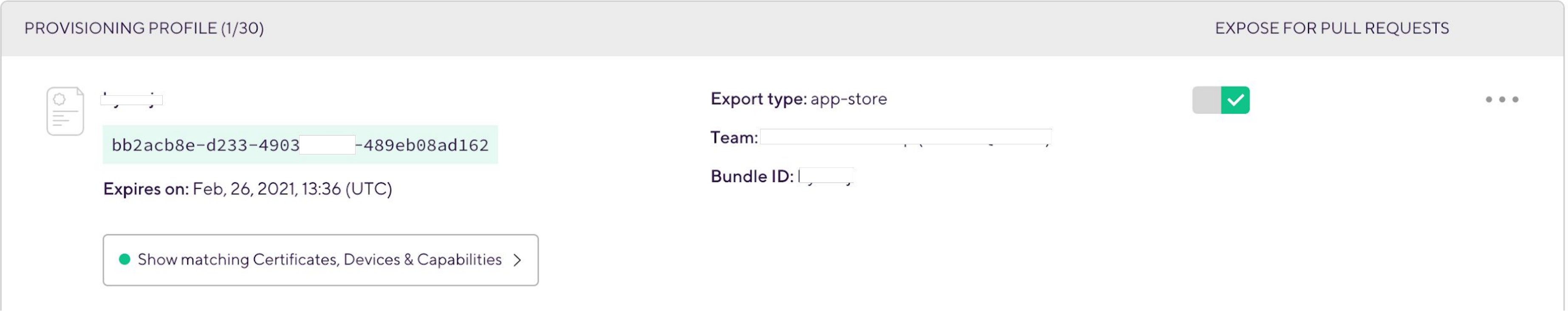
Bundle Identifier

Provisioning Profile

Signing Certificate Apple Distribution: ...

Bitrise - provisioning profile

A provisioning profile is a collection of digital entities that uniquely ties developers and devices to an authorized iPhone Development Team and enables a device to be used for testing.



PROVISIONING PROFILE (1/30)

EXPOSE FOR PULL REQUESTS

[redacted]

bb2acb8e-d233-4903[redacted]-489eb08ad162

Expires on: Feb, 26, 2021, 13:36 (UTC)

Export type: app-store

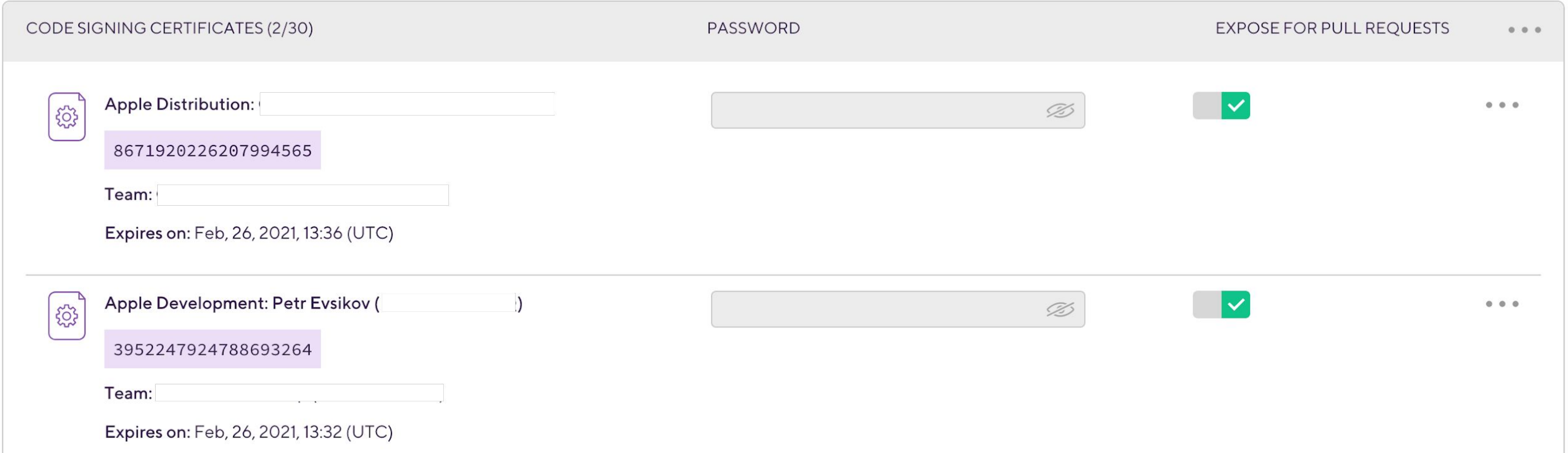
Team: [redacted]

Bundle ID: [redacted]

☑

Bitrise - code signing certificates

Signing your app allows iOS to identify who signed your app and to verify that your app hasn't been modified since you signed it. The Signing Identity consists of a public-private key pair that Apple creates for you.



CODE SIGNING CERTIFICATES (2/30) PASSWORD EXPOSE FOR PULL REQUESTS

Apple Distribution: [redacted]

8671920226207994565

Team: [redacted]

Expires on: Feb, 26, 2021, 13:36 (UTC)

✓

Apple Development: Petr Evsikov ([redacted])

3952247924788693264

Team: [redacted]

Expires on: Feb, 26, 2021, 13:32 (UTC)

✓

Bitrise - code signing certificates

Export your code signing files with Codesigndoc
Paste this script into your terminal and follow the instructions

```
bash -l -c "$(curl -sfL
https://raw.githubusercontent.com/bitrise-tools/codesigndoc/master/_scripts/
install_wrap.sh)"
```

Bitrise - android keystore file

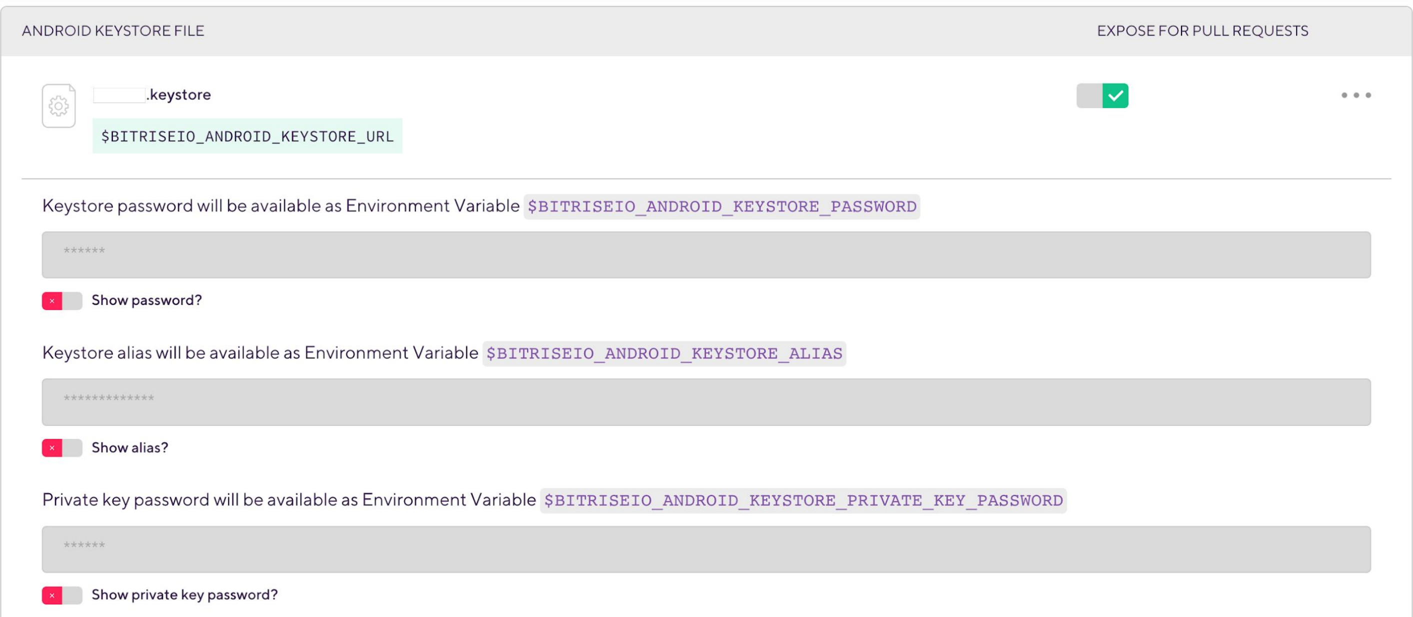
Android requires that all apps be digitally signed with a certificate before they can be installed. In order to distribute your Android application via Google Play store it needs to be signed with a release key that then needs to be used for all future updates.

```
$ keytool -genkeypair -v -keystore my-upload-key.keystore -alias
my-key-alias -keyalg RSA -keysize 2048 -validity 10000
```

1. Place the my-upload-key.keystore file under the android/app directory in your project folder.
2. Edit the file ~/.gradle/gradle.properties or android/gradle.properties, and add the following (replace ***** with the correct keystore password, alias and key password)

Bitrise - generic file storage

The Google Play Developer Publishing API allows you to automate frequent tasks having to do with app production and distribution. This provides functions similar to those available to a developer through the Play Console



ANDROID KEYSTORE FILE

EXPOSE FOR PULL REQUESTS

.keystore

$BITRISEIO_ANDROID_KEYSTORE_URL

☑

Keystore password will be available as Environment Variable $BITRISEIO_ANDROID_KEYSTORE_PASSWORD

******

☒ Show password?

Keystore alias will be available as Environment Variable $BITRISEIO_ANDROID_KEYSTORE_ALIAS

****

☒ Show alias?

Private key password will be available as Environment Variable $BITRISEIO_ANDROID_KEYSTORE_PRIVATE_KEY_PASSWORD

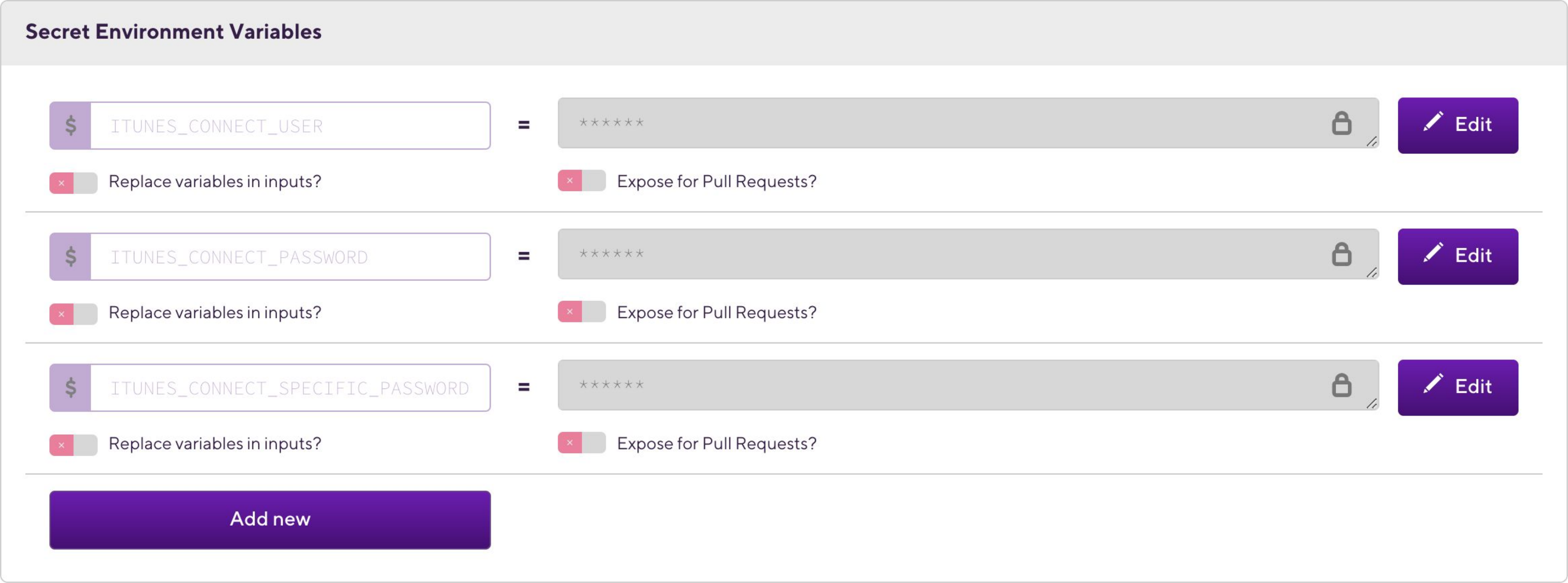
******

☒ Show private key password?

Bitrise - secrets

1. Open https://appleid.apple.com/account/manage
2. Go to section Security
3. Click Generate Password...
4. Enter a password label
5. Click create
6. Copy-Paste to Bitrise Secret

Bitrise - secrets



Secret Environment Variables

$ ITUNES_CONNECT_USER = ****** Edit

Replace variables in inputs? Expose for Pull Requests?

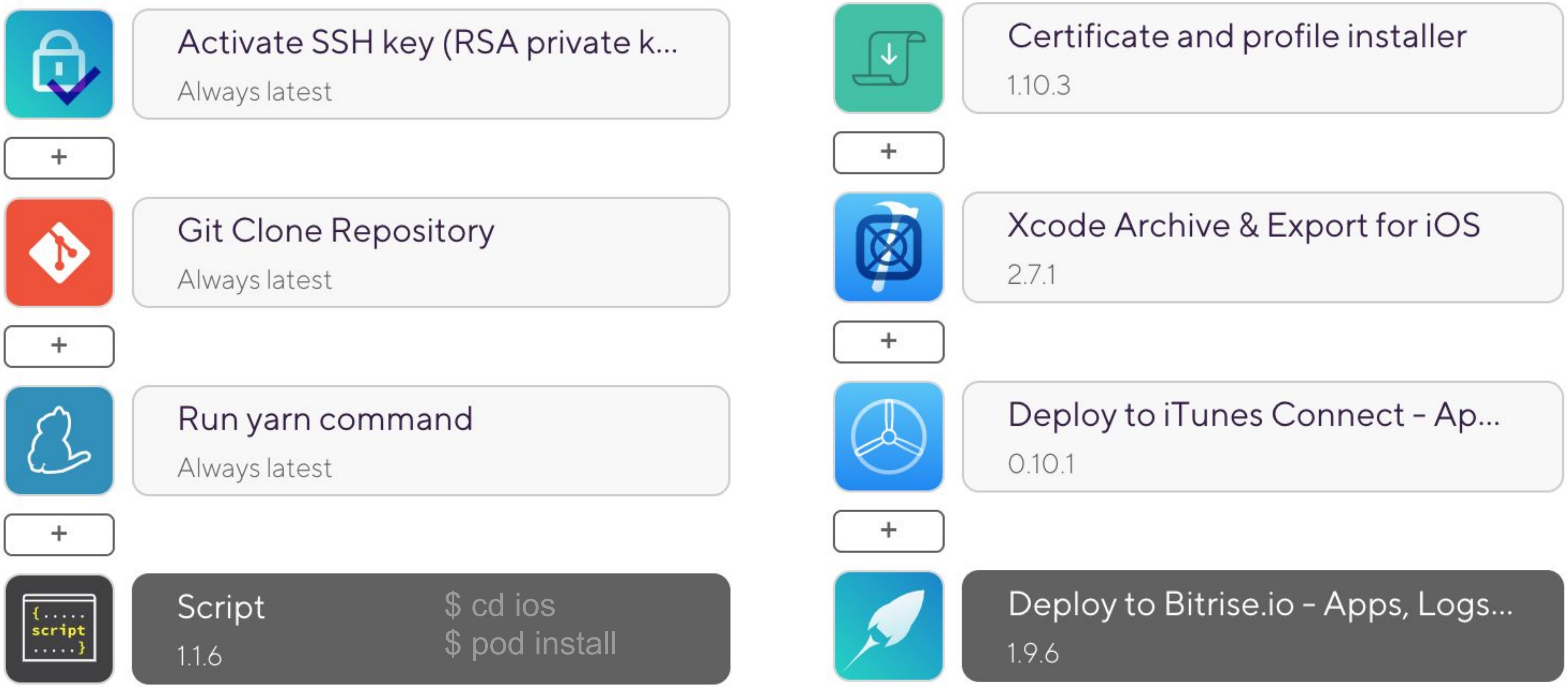
$ ITUNES_CONNECT_PASSWORD = ****** Edit

Replace variables in inputs? Expose for Pull Requests?

$ ITUNES_CONNECT_SPECIFIC_PASSWORD = ****** Edit

Replace variables in inputs? Expose for Pull Requests?

iOS Workflow



Activate SSH key (RSA private k...
Always latest

Git Clone Repository
Always latest

Run yarn command
Always latest

Script
1.1.6

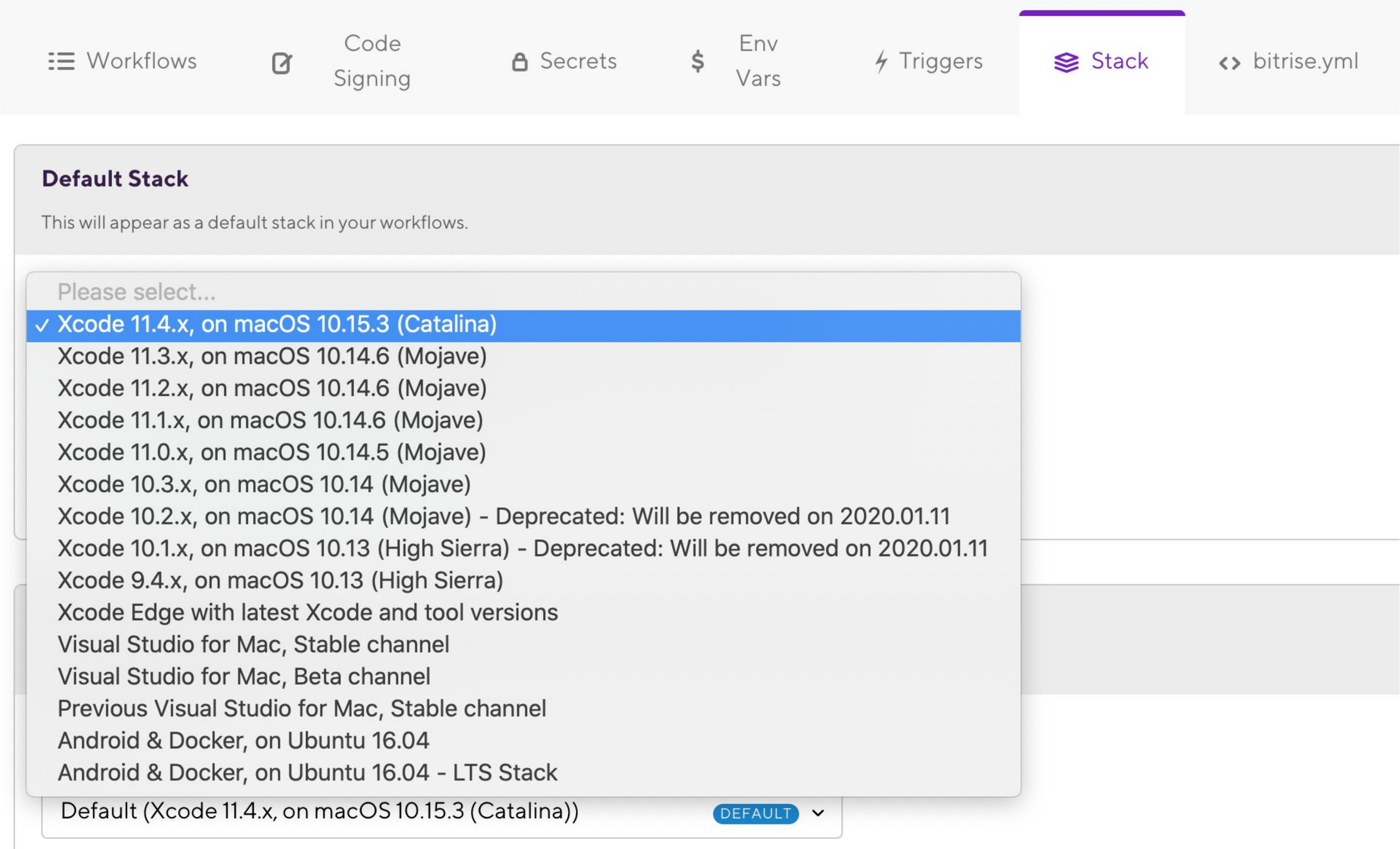
```
$ cd ios
$ pod install
```

Certificate and profile installer
1.10.3

Xcode Archive & Export for iOS
2.7.1

Deploy to iTunes Connect - Ap...
0.10.1

Deploy to Bitrise.io - Apps, Logs...
1.9.6



Default Stack

This will appear as a default stack in your workflows.

Please select...

✓ Xcode 11.4.x, on macOS 10.15.3 (Catalina)

Xcode 11.3.x, on macOS 10.14.6 (Mojave)

Xcode 11.2.x, on macOS 10.14.6 (Mojave)

Xcode 11.1.x, on macOS 10.14.6 (Mojave)

Xcode 11.0.x, on macOS 10.14.5 (Mojave)

Xcode 10.3.x, on macOS 10.14 (Mojave)

Xcode 10.2.x, on macOS 10.14 (Mojave) - Deprecated: Will be removed on 2020.01.11

Xcode 10.1.x, on macOS 10.13 (High Sierra) - Deprecated: Will be removed on 2020.01.11

Xcode 9.4.x, on macOS 10.13 (High Sierra)

Xcode Edge with latest Xcode and tool versions

Visual Studio for Mac, Stable channel

Visual Studio for Mac, Beta channel

Previous Visual Studio for Mac, Stable channel

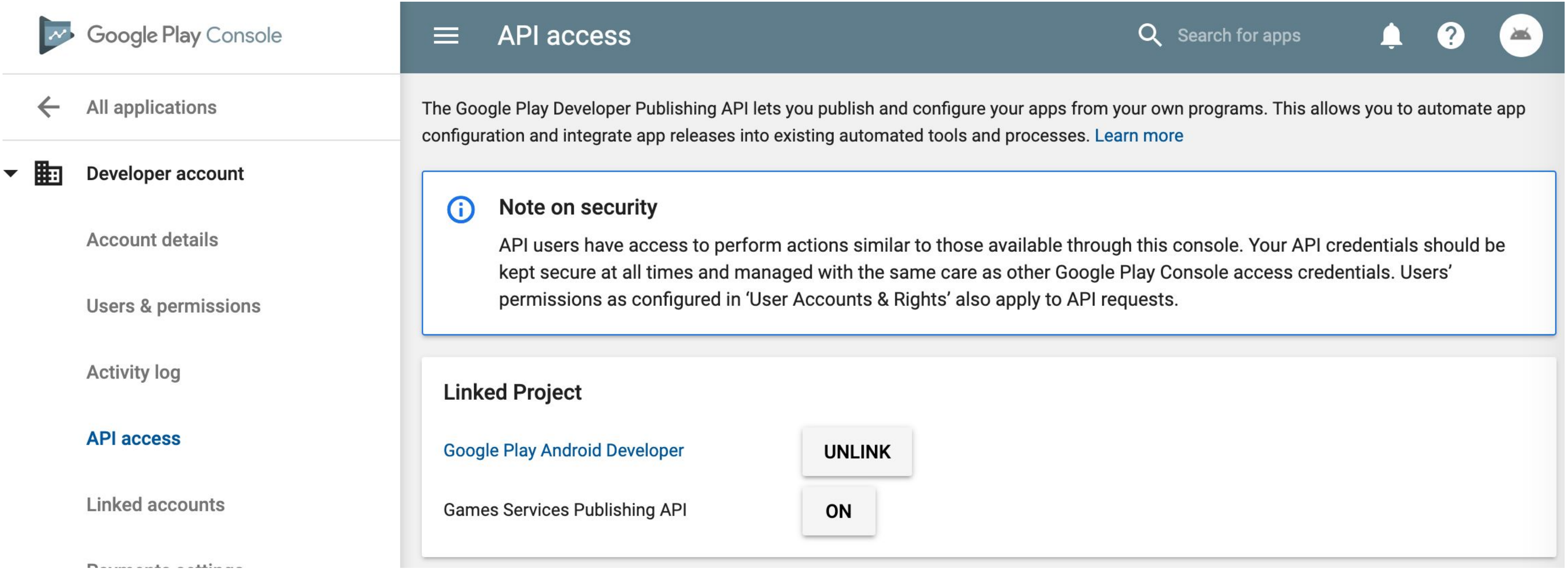
Android & Docker, on Ubuntu 16.04

Android & Docker, on Ubuntu 16.04 - LTS Stack

Default (Xcode 11.4.x, on macOS 10.15.3 (Catalina)) DEFAULT

Link Google Play Developer Publishing API

NOTE: Create and link only from account owner



The Google Play Developer Publishing API lets you publish and configure your apps from your own programs. This allows you to automate app configuration and integrate app releases into existing automated tools and processes. Learn more

Note on security

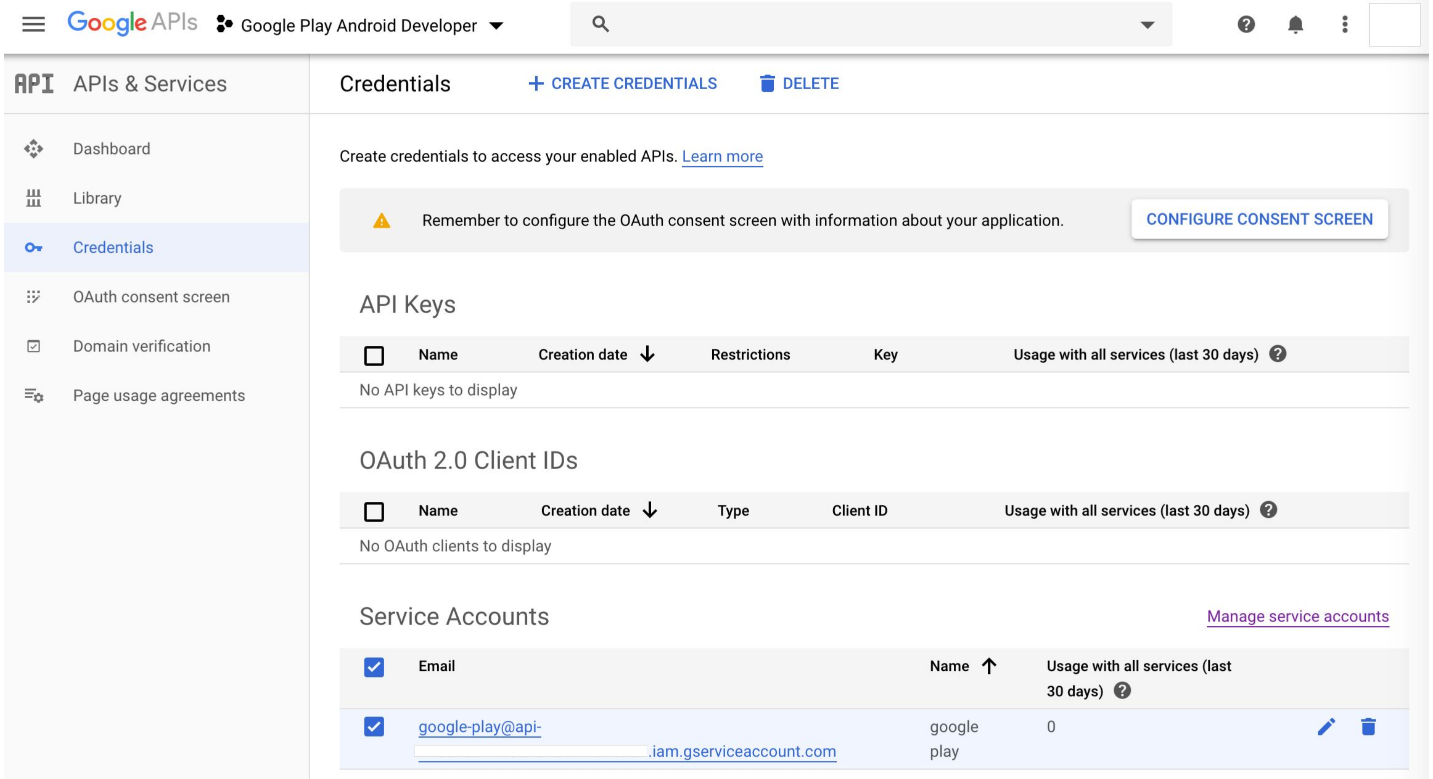
API users have access to perform actions similar to those available through this console. Your API credentials should be kept secure at all times and managed with the same care as other Google Play Console access credentials. Users' permissions as configured in 'User Accounts & Rights' also apply to API requests.

Linked Project

Google Play Android Developer

Games Services Publishing API

Create Service Account



Credentials

Create credentials to access your enabled APIs. Learn more

Remember to configure the OAuth consent screen with information about your application.

API Keys

□	Name	Creation date ↓	Restrictions	Key	Usage with all services (last 30 days)
No API keys to display					

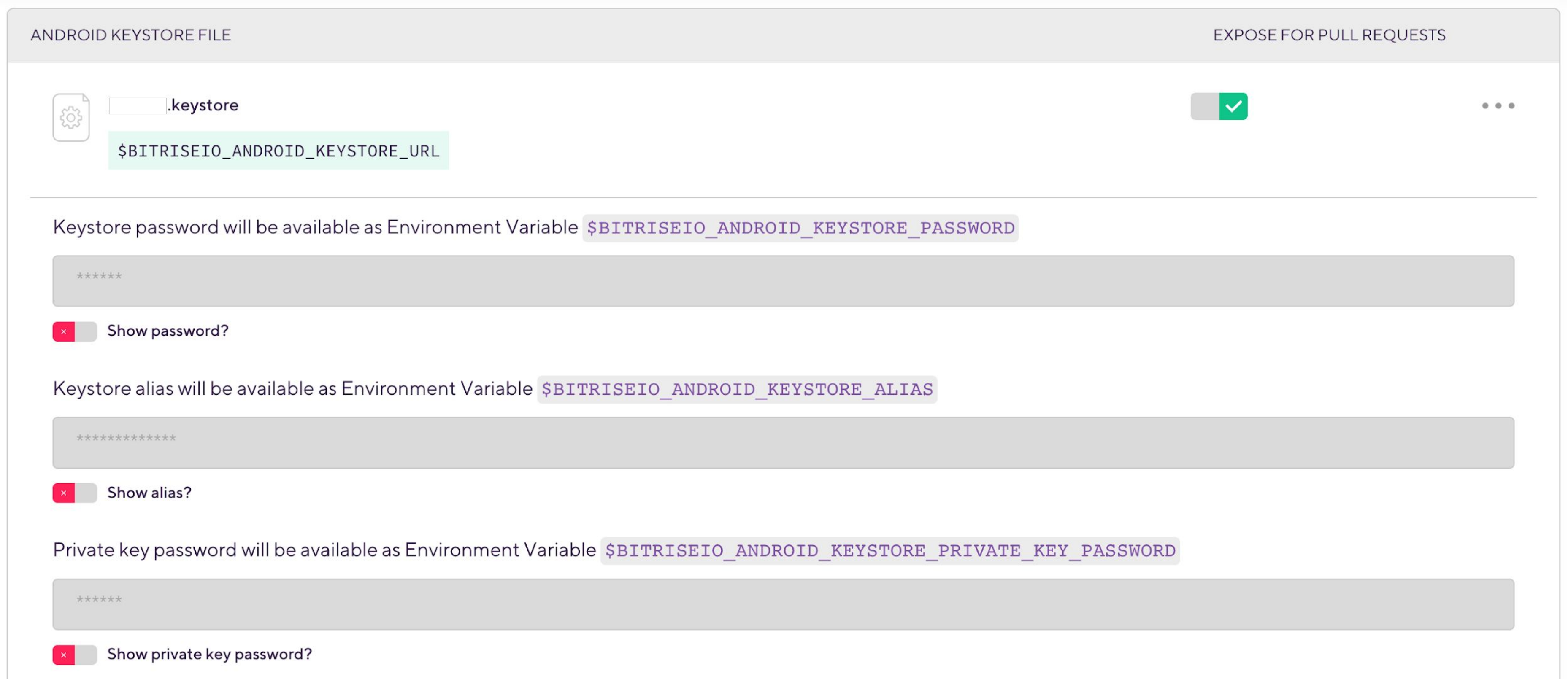
OAuth 2.0 Client IDs

□	Name	Creation date ↓	Type	Client ID	Usage with all services (last 30 days)
No OAuth clients to display					

Service Accounts

☑	Email	Name ↑	Usage with all services (last 30 days)
☑	google-play@api-[redacted].iam.gserviceaccount.com	google play	0

https://console.developers.google.com/apis/credentials



ANDROID KEYSTORE FILE

EXPOSE FOR PULL REQUESTS

[redacted].keystore ✓

$BITRISEIO_ANDROID_KEYSTORE_URL

Keystore password will be available as Environment Variable `$BITRISEIO_ANDROID_KEYSTORE_PASSWORD`

******

☒ Show password?

Keystore alias will be available as Environment Variable `$BITRISEIO_ANDROID_KEYSTORE_ALIAS`

****

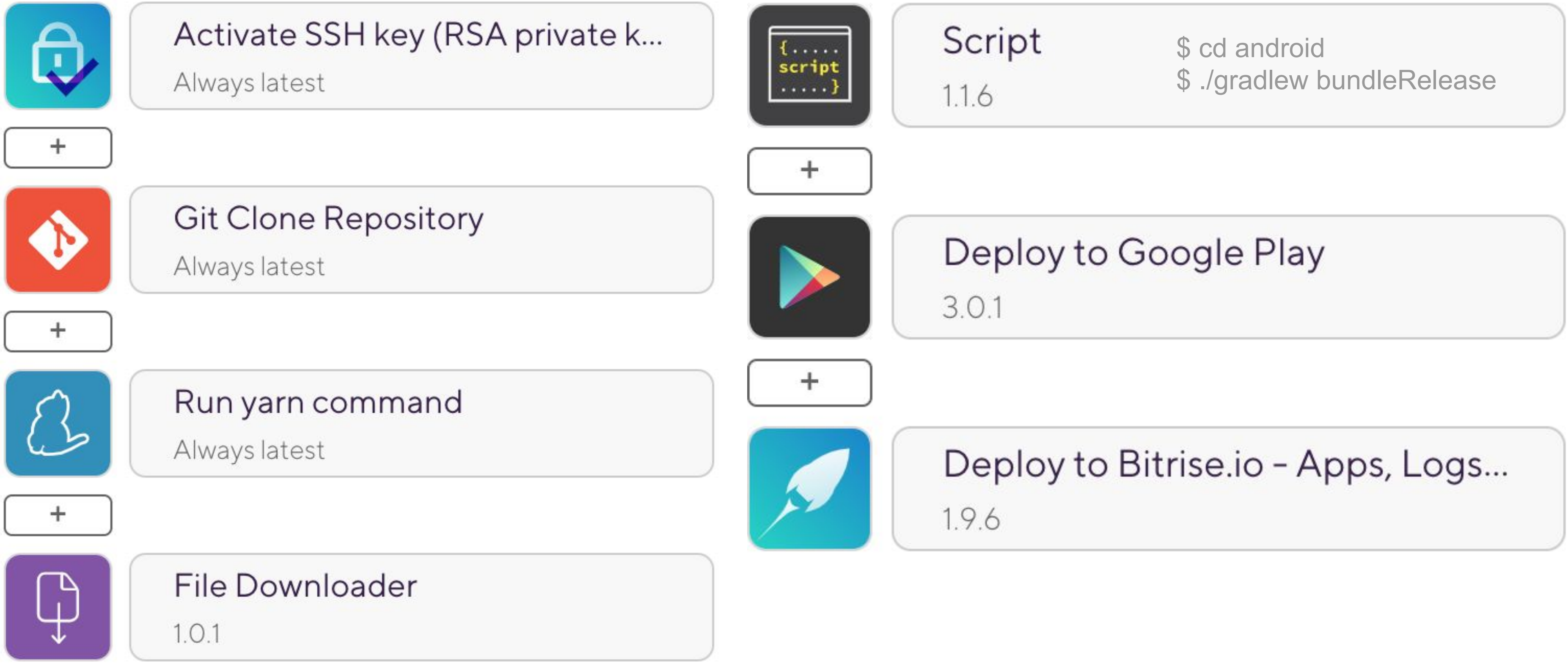
☒ Show alias?

Private key password will be available as Environment Variable `$BITRISEIO_ANDROID_KEYSTORE_PRIVATE_KEY_PASSWORD`

******

☒ Show private key password?

Android workflow



Activate SSH key (RSA private k...
Always latest

Git Clone Repository
Always latest

Run yarn command
Always latest

File Downloader
1.0.1

Script
1.1.6

```
$ cd android
$ ./gradlew bundleRelease
```

Deploy to Google Play
3.0.1

Deploy to Bitrise.io - Apps, Logs...
1.9.6

Bitrise benefits

5 referrals - Bitrise t-shirt

4 referrals - 30 min/build

3 referrals - 25 min/build

2 referrals - 20 min/build

1 referral - 15 min/build

CI/CD as a local pipeline

fastlane is the easiest way to automate beta deployments and releases for your iOS and Android apps

```
lane :beta do
  increment_build_number
  build_app
  upload_to_testflight
end

lane :release do
  capture_screenshots
  build_app
  upload_to_app_store       # Upload the screenshots and the binary to iTunes
  slack                     # Let your team-mates know the new version is live
end
```

What would you like to use fastlane for?

- 📸 Automate screenshots
- 👩‍✈️ Automate beta distribution to TestFlight
- 🚀 Automate App Store distribution

fastlane is officially macOS only

❌ Windows

❌ Linux

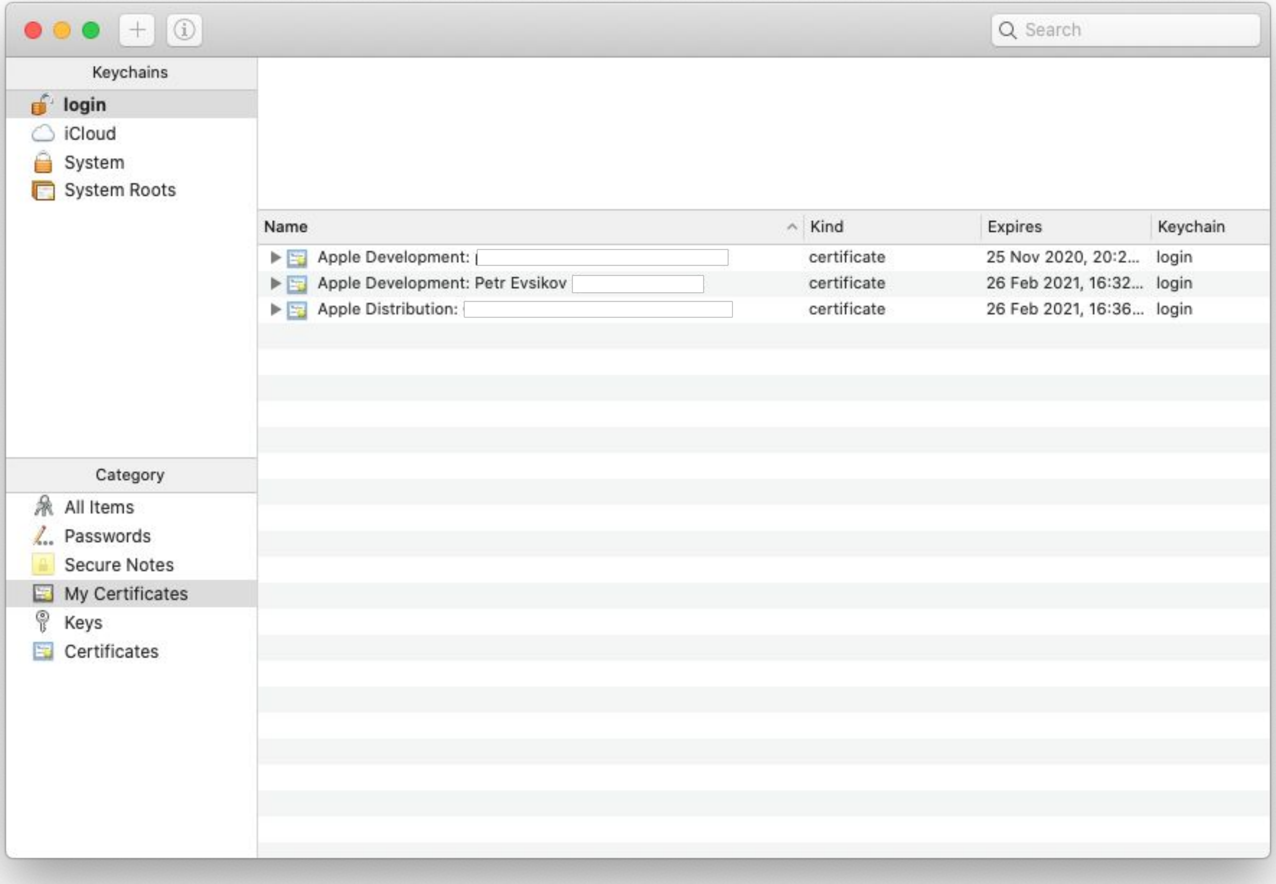
For Help

Telegram

@reactnativebelarus

Вопросики?

1. Где найти сертификаты и как экспортировать их в Bitrise?
2. Почему CI / CD = 0.2525 ?
3. А что такое Continuous Deployment?



Name	Kind	Expires	Keychain
▶ Apple Development: [redacted]	certificate	25 Nov 2020, 20:2...	login
▶ Apple Development: Petr Evsikov [redacted]	certificate	26 Feb 2021, 16:32...	login
▶ Apple Distribution: [redacted]	certificate	26 Feb 2021, 16:36...	login

Римские цифры

1 – 10	11 – 20	21 – 100	101 – 1000
I – 1	XI – 11	XXI – 21	CI – 101
II – 2	XII – 12	XXII – 22	CC – 200
III – 3	XIII – 13	XXX – 30	CCC – 300
IV – 4	XIV – 14	XL – 40	CD – 400
V – 5	XV – 15	L – 50	D – 500
VI – 6	XVI – 16	LX – 60	DC – 600
VII – 7	XVII – 17	LXX – 70	DCC – 700
VIII – 8	XVIII – 18	LXXX – 80	DCCC – 800
IX – 9	XIX – 19	XC – 90	CM – 900
X – 10	XX – 20	C – 100	M – 1000

Continuous deployment goes one step beyond continuous delivery. It involved releasing every change that passes all checks in the pipeline. In the most iconic case, the apps are internally tested in-house by all users in a Continuous Delivery way to be polished before release in a Continuous Deployment format.

Thanks for watching

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Web: ksetrin.com