

## iOS : Application Signing & Certificate Creation, TestFlight, Fastlane

### What is Application Signing?

*Signing* your application 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. Think about the public-key as a lock-only mechanism, so you need to know the private key to unwrap, unlock or decode data again.

All these private and public key-pair come from a certificate containing them. All this magic happens when you create a Certificate Signing Request (CSR) through the Keychain Access Application. If you do so, the Keychain Application will create a private key and a `certSigningRequest` file which you'll then upload to Apple. Apple will proof the request and issue a certificate for you. The Certificate will contain the public key that can be downloaded to your system. After you downloaded it you need to put it into your Keychain Access Application by double clicking it. It is used by cryptographic functions to generate a unique signature for your application, which is basically your Code Signing Identity.

### What is a Provisioning Profile?

Apple likes to keep things secure, so it is not possible to install an App on any iOS Device out there using only the certificate. This is where Provisioning Profiles comes in. A Provisioning Profile must be installed on each device your application code should run on. Each Development Provisioning Profile will contain a set of *iPhone Development Certificates*, *Unique Device Identifiers* and an *App ID*. An *App ID* is a two-part string used to identify one or more apps from a single development team.

Devices specified in the Development Provisioning Profile can be used for testing only by those individuals whose Development Certificates are included in the profile. A single device can contain multiple provisioning profiles. The difference between Development and Distribution Profiles is that Distribution Profiles don't specify any Device IDs. If you want to release an App which should be limited to a number of registered devices, you need to use an Ad-Hoc profile for that.

## What is TestFlight?

TestFlight is a platform provided by Apple that allows you to send a testable version of your app to specific beta users. It's important to realize this is different from the App Store (which is available to the general public). Once you send a user a TestFlight invitation, they must download the TestFlight app where they can download and use a specific version of your app for 60 days.

## What is FastLane?

Fastlane can be simply described as the easiest way to automate building and release your iOS and Android apps, via a suite of tools that can work either autonomously or in tandem to accomplish tasks .

The benefit of leveraging one or more fastlane actions is in your ability to save hours and even days, saving you the laborious task of having to submit, provision, and take screenshots manually, and instead allowing you to focus on what matters: that is, feature development. This is the mantra of Continuous Deployment and CD—the ability to code and release iteratively and rapidly, with minimal barriers. This is what fastlane is.