iOS application instrumentation using customer certificate

During the normal instrumentation process, a Perfecto library is added to the app's binary. Specific function calls inside the app may be replaced with calls to functions from the Perfecto library. As a result of this processing:

- Apps have to be resigned with a Perfecto iOS certificate after the binary has been modified, due to iOS code signature requirements.

- Apps using special entitlements, that require the original author's certificate, may not work after the resigning process.

Perfecto offers a feature that enables customers to instrument an application with the Perfecto library and then re-sign with the customer's own certificate. The main advantages of the *Customized Instrumentation* feature include:
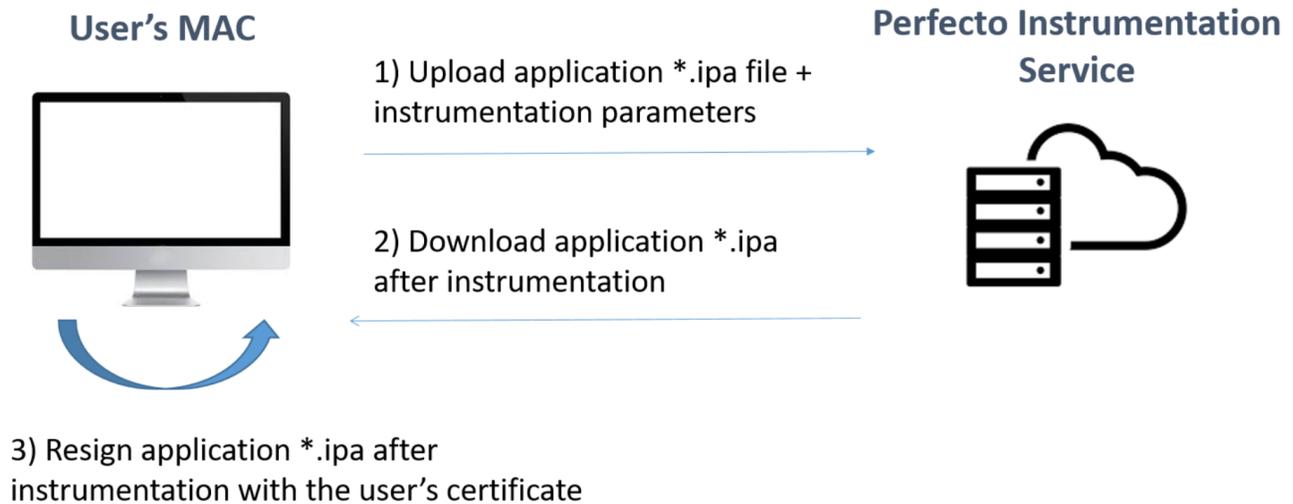
- Users have the ability to instrument the app while maintaining the original application entitlements and signature.

- The instrumentation process remains the same, except for the resign step;

  - Instead of resigning with Perfecto certificate, the application signature is performed locally, at the customer's premises, on a Mac machine with the customer's enterprise certificate.

How it works

Enable users to instrument the app while maintaining the original application entitlements and signature.

User's MAC

1) Upload application *.ipa file + instrumentation parameters

2) Download application *.ipa after instrumentation

Perfecto Instrumentation Service

3) Resign application *.ipa after instrumentation with the user's certificate

The resign process is performed on a Mac machine within the Customer's environs.

The Keychain on the signing Mac should include:

- The enterprise certificate used to resign the instrumented application,
- *Mobileprovision* file matching the enterprise certificate.

Perfecto will provide the user with a script, to run on the Mac machine, that executes the following steps (see diagram above):

step 1: Upload the application file (*.*ipa* file) to Perfecto's instrumentation service.

step 2: Download the instrumented application file (*.ipa file) from Perfecto's instrumentation service.

step 3: Resign the instrumented application file with the customer's certificate.

Requirements for the Mac machine

- OS - El Capitan or higher
- XCode 8.3.3 or later
- Python 3.6 and above - with "requests" module installed.

- To install "requests" module run the following command:

```
pip3 install requests
```

- Open to internet connection (to access Perfecto services)
- Keychain on Mac should contain the required enterprise certificate (no duplicate names- verify only a single entry with this name in the keychain list)
- Keychain password
- *Mobileprovision* file matching the enterprise certificate
- *.ipa file of the application (which should be instrumented)

Download the Python Script

Go to GitHub to download the Python script: ***customInstrumentWrapper.py***

Run Perfecto's resign script on the Mac machine

1. Run the script with the Python service.

Example Script Activation

```
python3 customInstrumentWrapper.py -i inputIPA.ipa -o outputIPA.ipa -t token.txt -p provision.
mobileprovision -c "certificate name" -u LAB.perfectomobile.com -v <labVersionNum> -ih -is
```

Script name: ***customInstrumentWrapper.py***
2. Required Parameters:

-i (IPA) - Original ***ipa*** File to Instrument

-o (OUTPUT_FILE) - Name for the Instrumented ***ipa*** File

-p PROVISIONING_PROFILE - Mobile Provisioning Profile File to use

-c CERTIFICATE_NAME - Name of the Certificate to use, as saved in the Keychain

-t TOKEN - Text file Containing a Valid Security Token

-u URL - Perfecto Lab URL

-v VERSION - Perfecto Lab Version

- Instrumentation Flags, at least one of the following is required:

-ih - Enables Hybrid Instrumentation

-is - Enables Sensors Instrumentation

Optional Parameters
-ent – (Optional) Entitlements File. Add a prepared *entitlements plist* profile in place of the generic *entitlements* section generated by the script, based on the information provided.

Script Output

During execution - the script reports its progress through the steps indicated above.

Upon completion, the fully instrumented and signed ***ipa*** file is generated.

Demo

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Limitations and troubleshooting

- Using multiple certificates to sign the application is not supported.

- For troubleshooting, see [this article.](#)