

What's New in Signing for Xcode and Xcode Server

Session 403

Chris D'Angelo, Xcode Engineer

Itai Rom, Xcode Engineer

Brent Shank, Xcode Engineer

▶ Identity

▼ Signing

Automatically manage signing
Xcode will create and update profiles, app IDs, and certificates.

Team

Provisioning Profile Xcode Managed Profile ⓘ

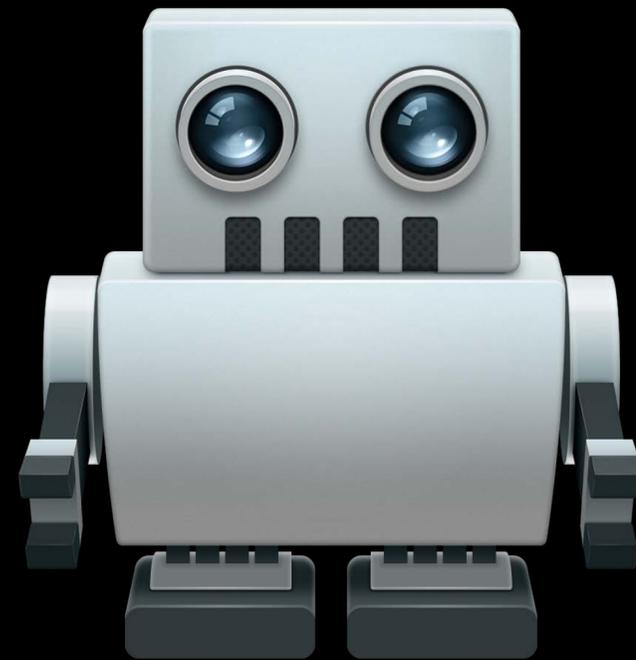
Signing Certificate iPhone Developer: Chris D'Angelo (N24BSGT8F9)

▶ Deployment Info

▶ App Icons and Launch Images

▶ Embedded Binaries

▶ Linked Frameworks and Libraries



Agenda

Agenda

Fundamentals

Agenda

Fundamentals

Development signing with Xcode Server

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Development signing with Xcode Server

Manual signing improvements

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Development signing with Xcode Server

Manual signing improvements

Distributing your app

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Development signing with Xcode Server

Manual signing improvements

Distributing your app

Distribution signing with Xcode Server

Why Code Sign?

Why Code Sign?

Protects user privacy and security

Why Code Sign?

Protects user privacy and security

Authenticates the app creator

Why Code Sign?

Protects user privacy and security

Authenticates the app creator

Authorizes access to app services

How Does the Code Signing System Work?

App launch system check



Code Signature

How Does the Code Signing System Work?

App launch system check

✔ Code signature is valid



Code Signature

How Does the Code Signing System Work?

App launch system check

- ✓ Code signature is valid
- ✓ Allowed to use system services



Code Signature

How Does the Code Signing System Work?

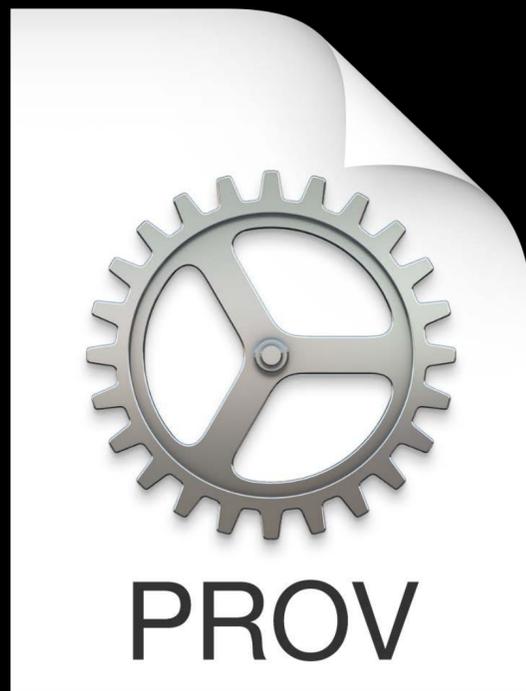
App launch system check

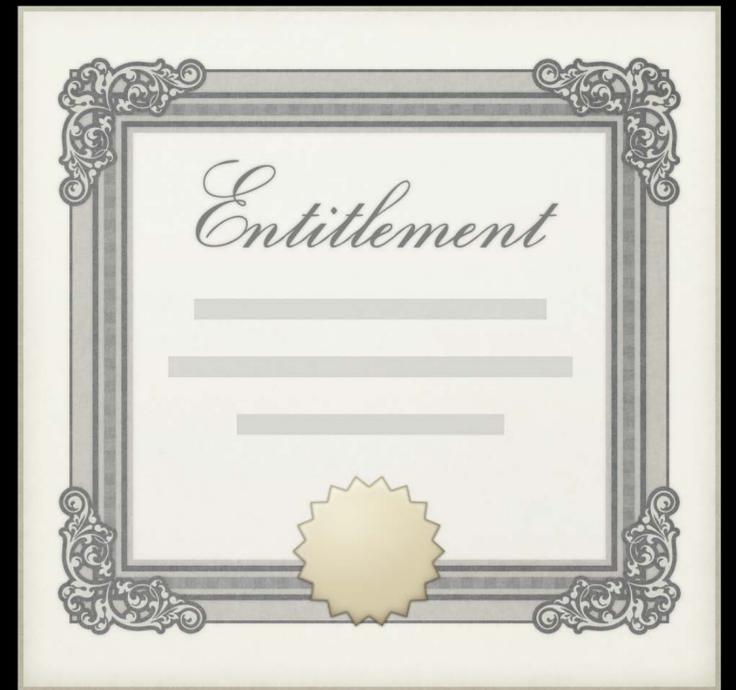
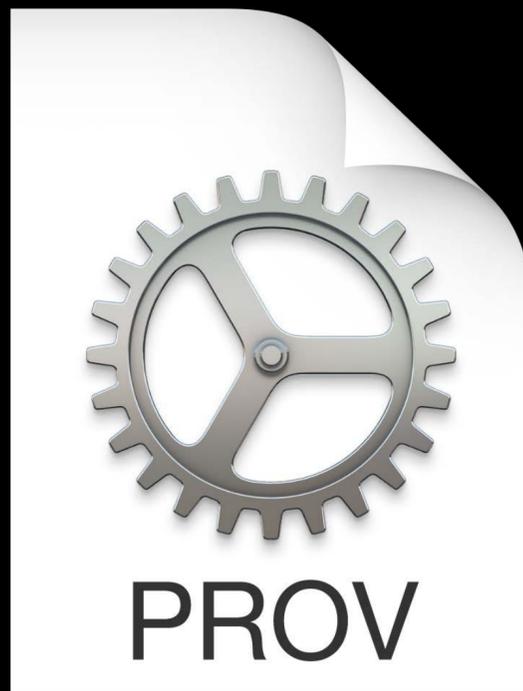
- ✓ Code signature is valid
- ✓ Allowed to use system services
- ✓ Allowed to run on device



Code Signature







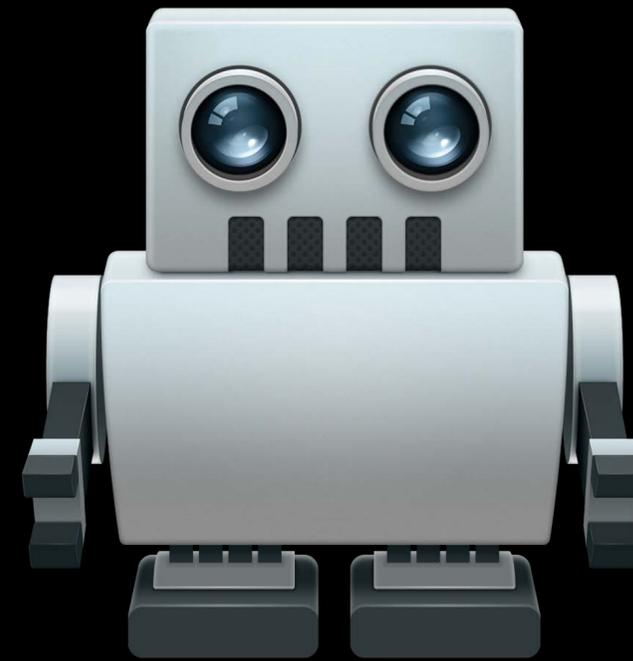
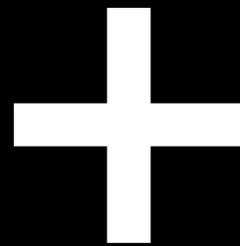




Automatic Signing



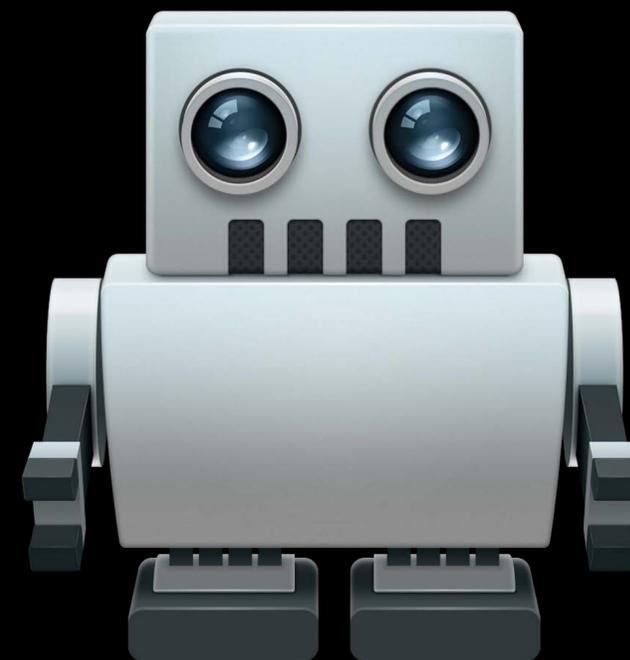
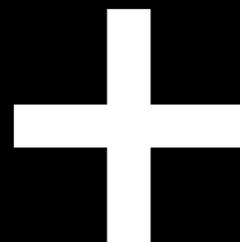
Automatic Signing



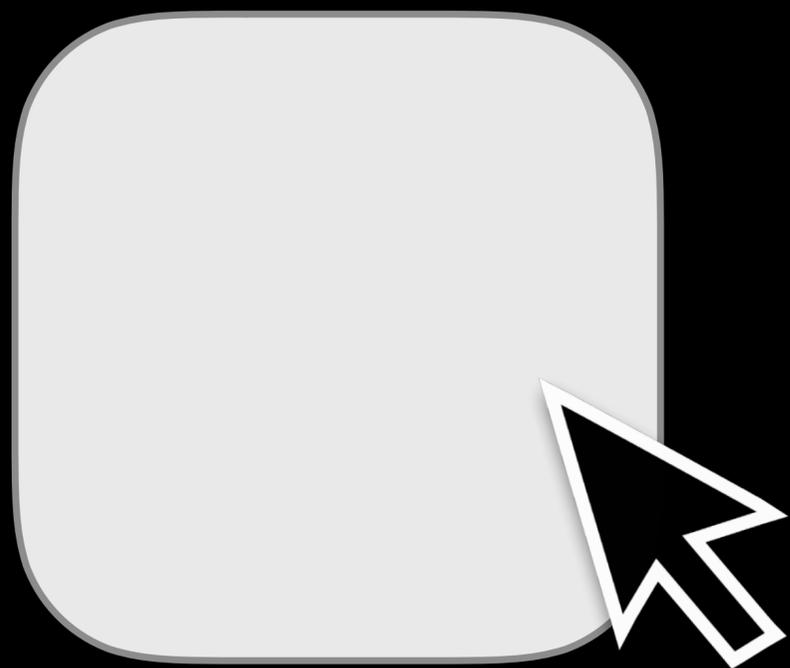
Xcode Server



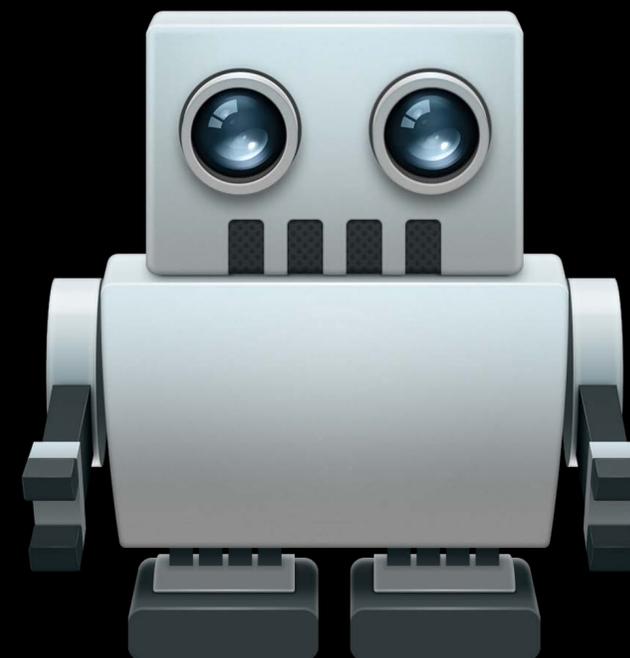
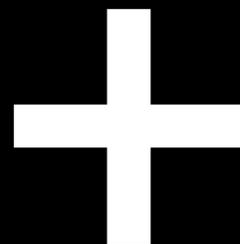
Automatic Signing



Xcode Server



Manual Signing



Xcode Server

Xcode Server

Xcode Server

Continuous integration powered by Xcode

Xcode Server

Continuous integration powered by Xcode

Built into Xcode

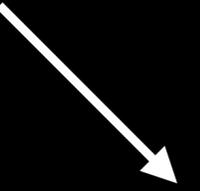
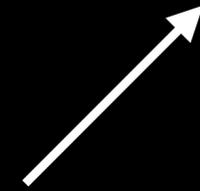
Xcode Server

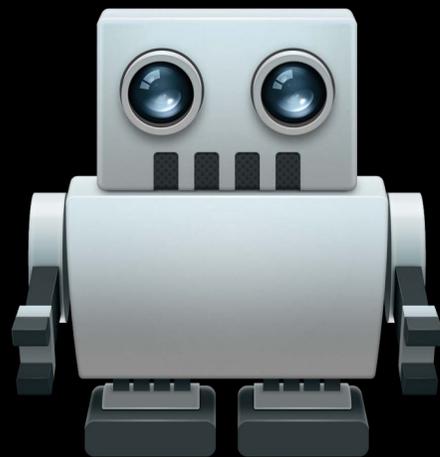
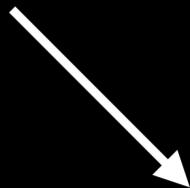
Continuous integration powered by Xcode

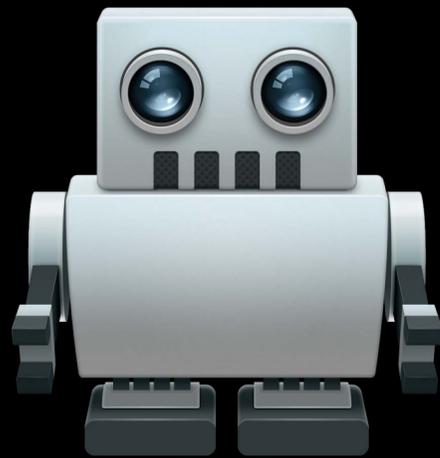
Built into Xcode

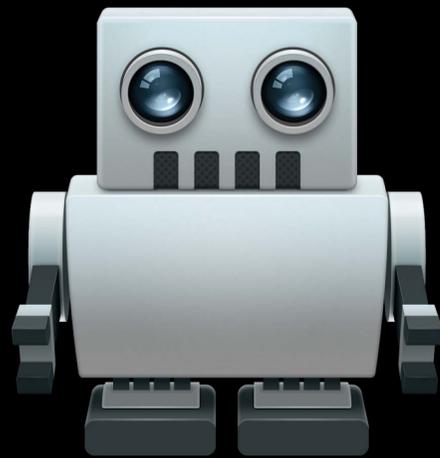
Runs your tests on simulators and devices



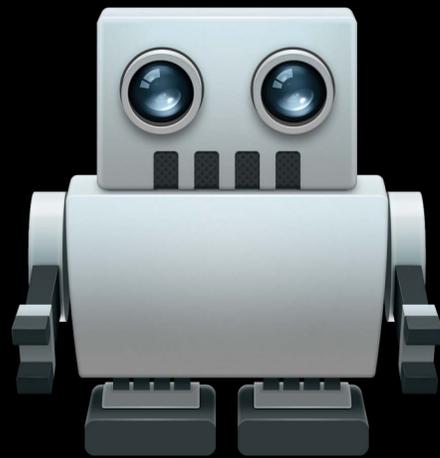




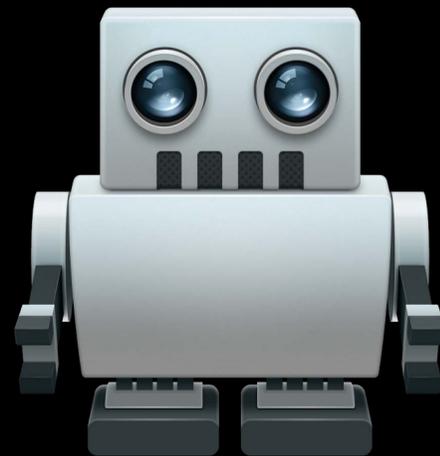




Code Signature

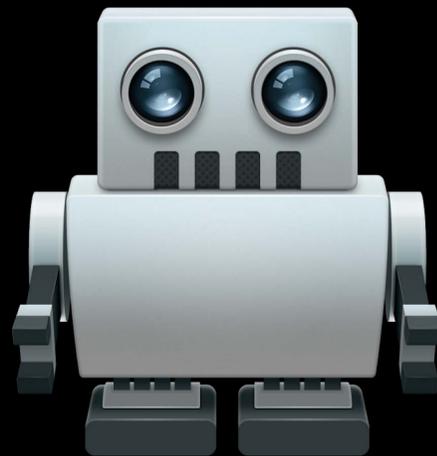


Code Signature

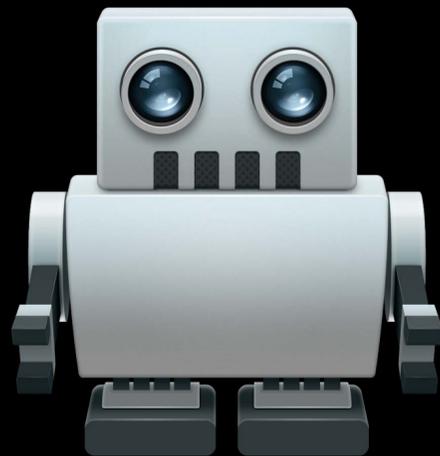


Code Signature

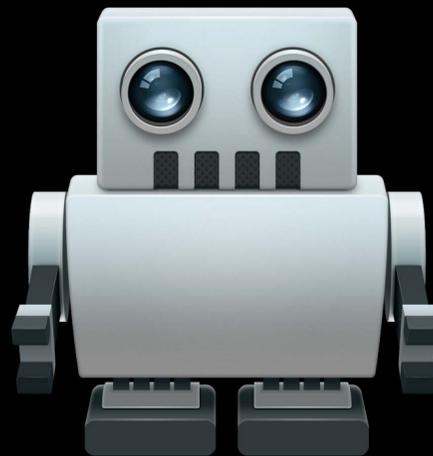




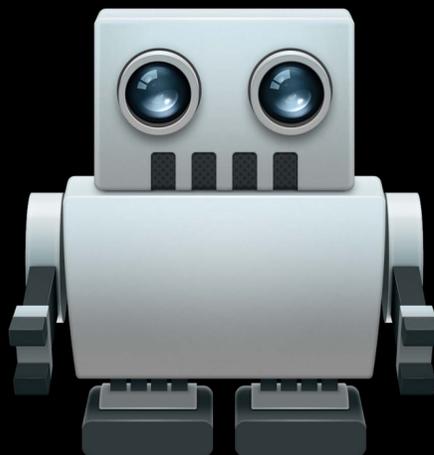
Code Signature



Code Signature



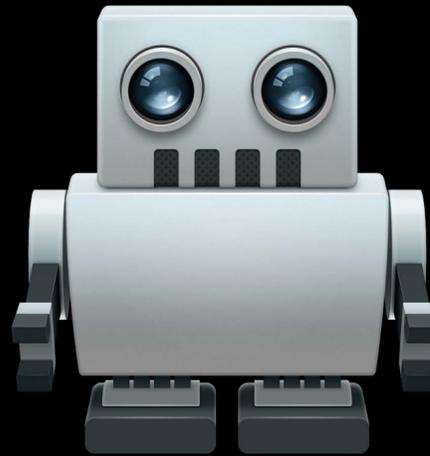
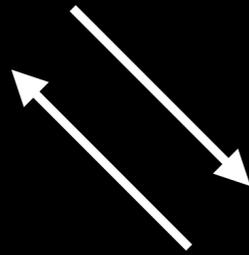
Code Signature



Code Signature



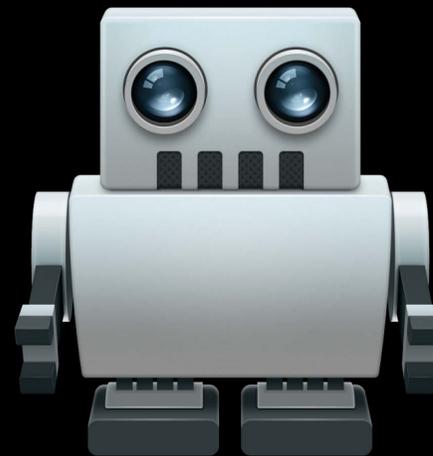
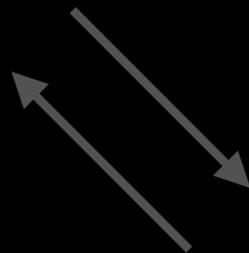
Automatic Signing



Code Signature



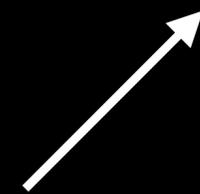
Automatic Signing



Code Signature



Manual Signing



Xcode Server

Development signing



Xcode Server

Development signing



Automatic or manual signing

Xcode Server

Development signing



Automatic or manual signing

Xcode Server joins your team for development signing

Xcode Server

Development signing



Automatic or manual signing

Xcode Server joins your team for development signing

Supports two-factor authentication

xcodesbuild

Development signing



NEW

xcodebuild

Development signing



NEW

Command line support for automatic signing repairs

xcodebuild

Development signing



NEW

Command line support for automatic signing repairs

```
xcodebuild -allowProvisioningUpdates
```

xcodebuild

Development signing



NEW

Command line support for automatic signing repairs

```
xcodebuild -allowProvisioningUpdates
```

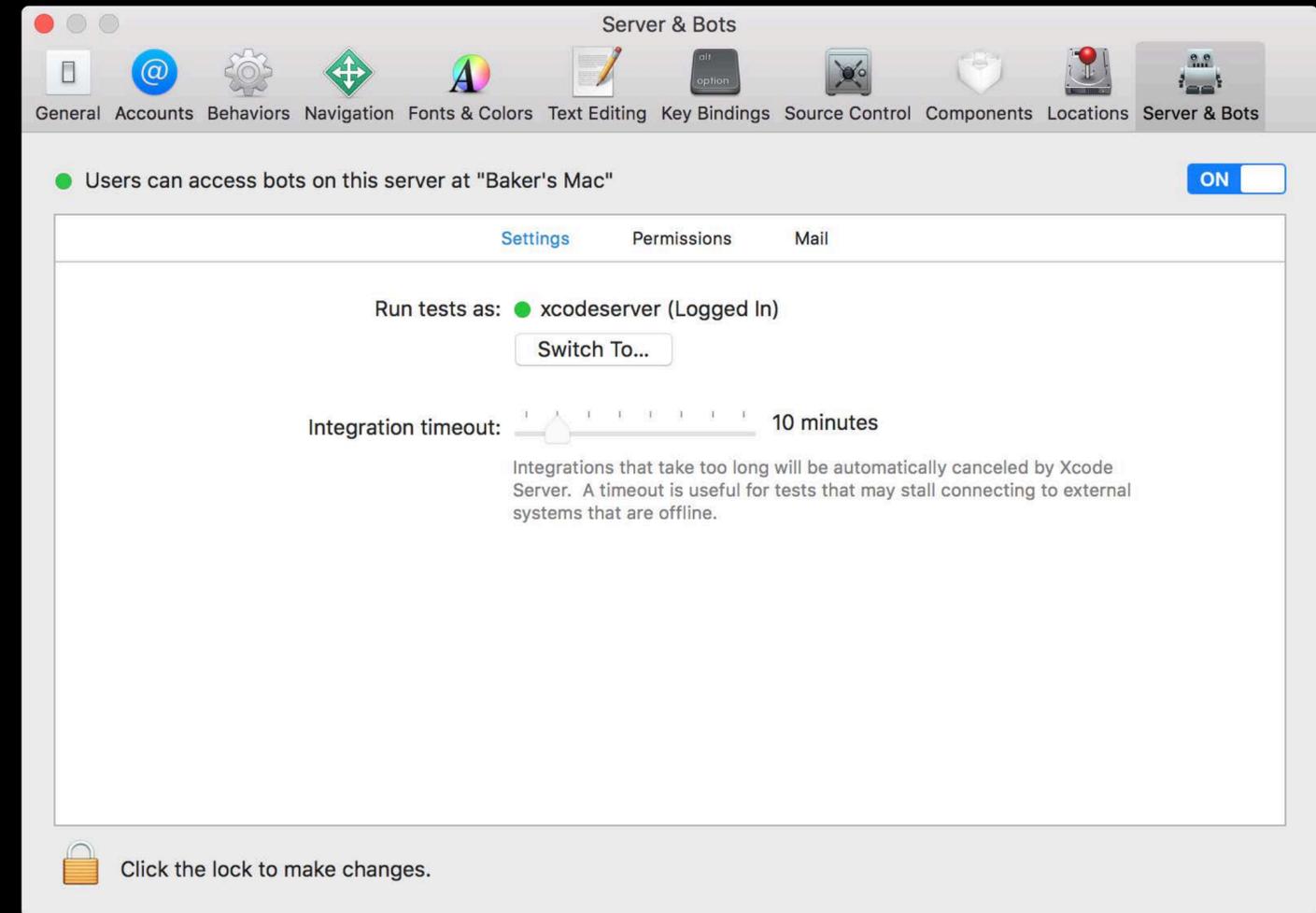
```
xcodebuild -allowProvisioningDeviceRegistration
```

Setting up Xcode Server

Xcode Server

Setting up a server

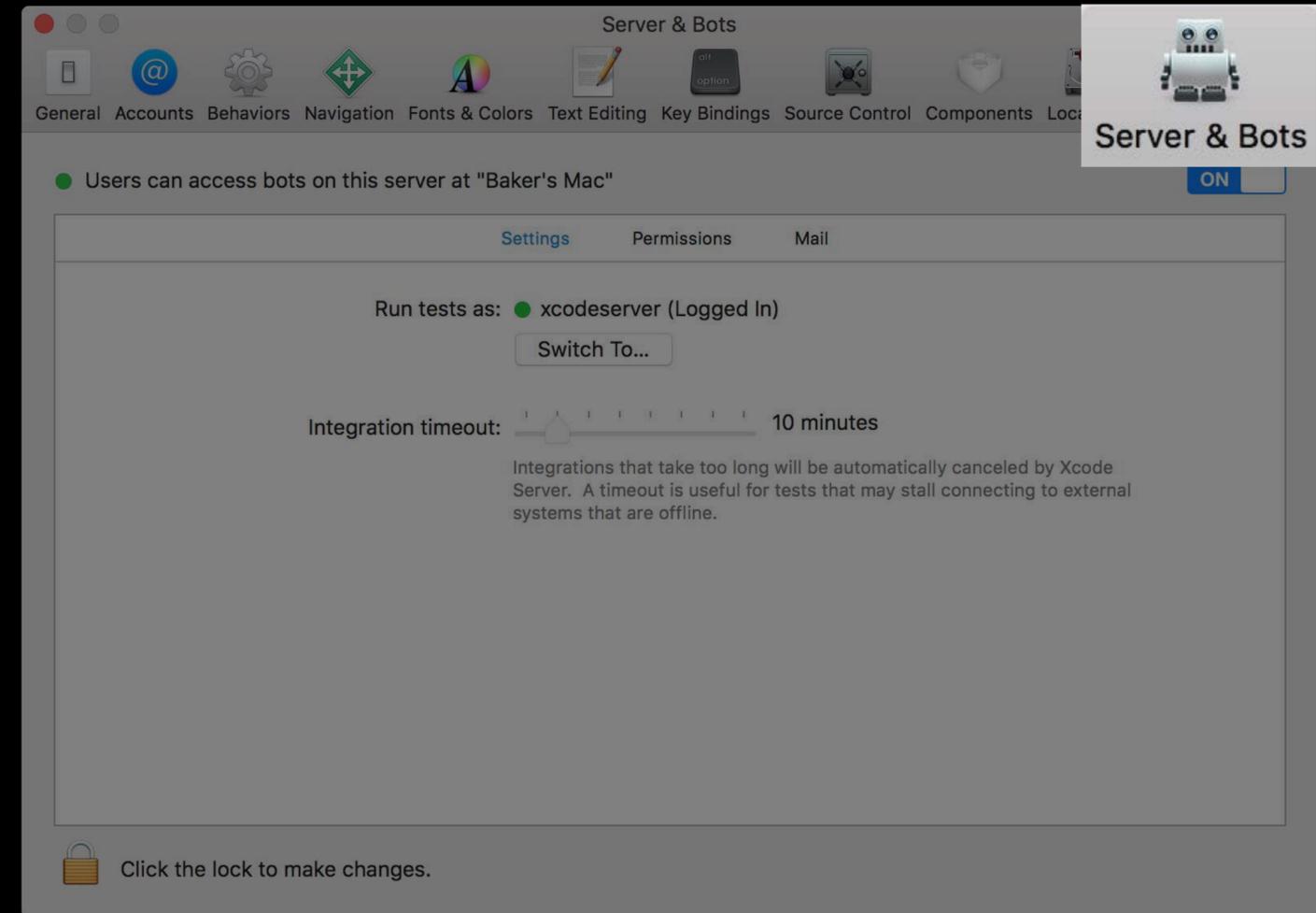
Add a server in Preferences



Xcode Server

Setting up a server

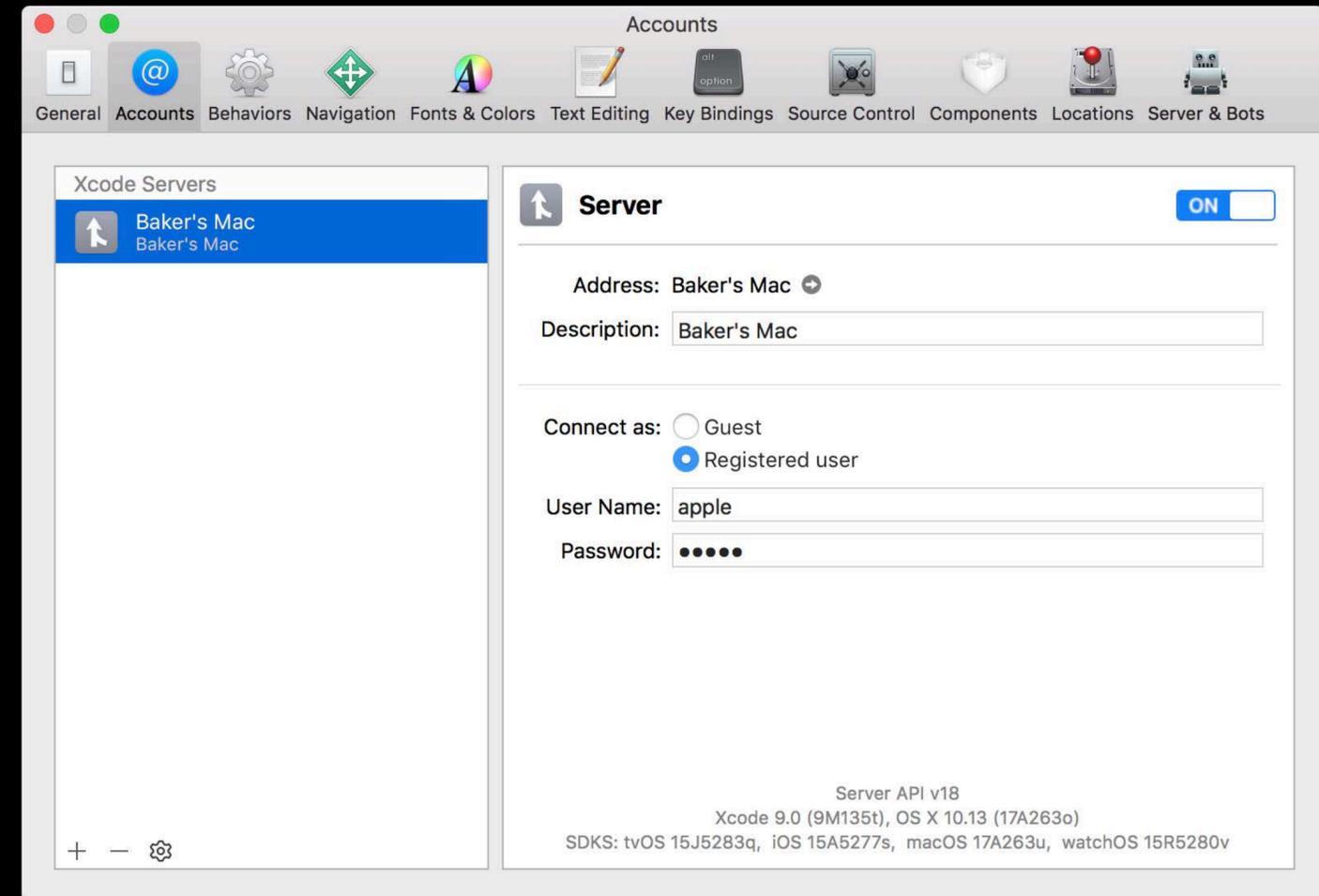
Add a server in Preferences



Xcode Server

Setting up a client of the server

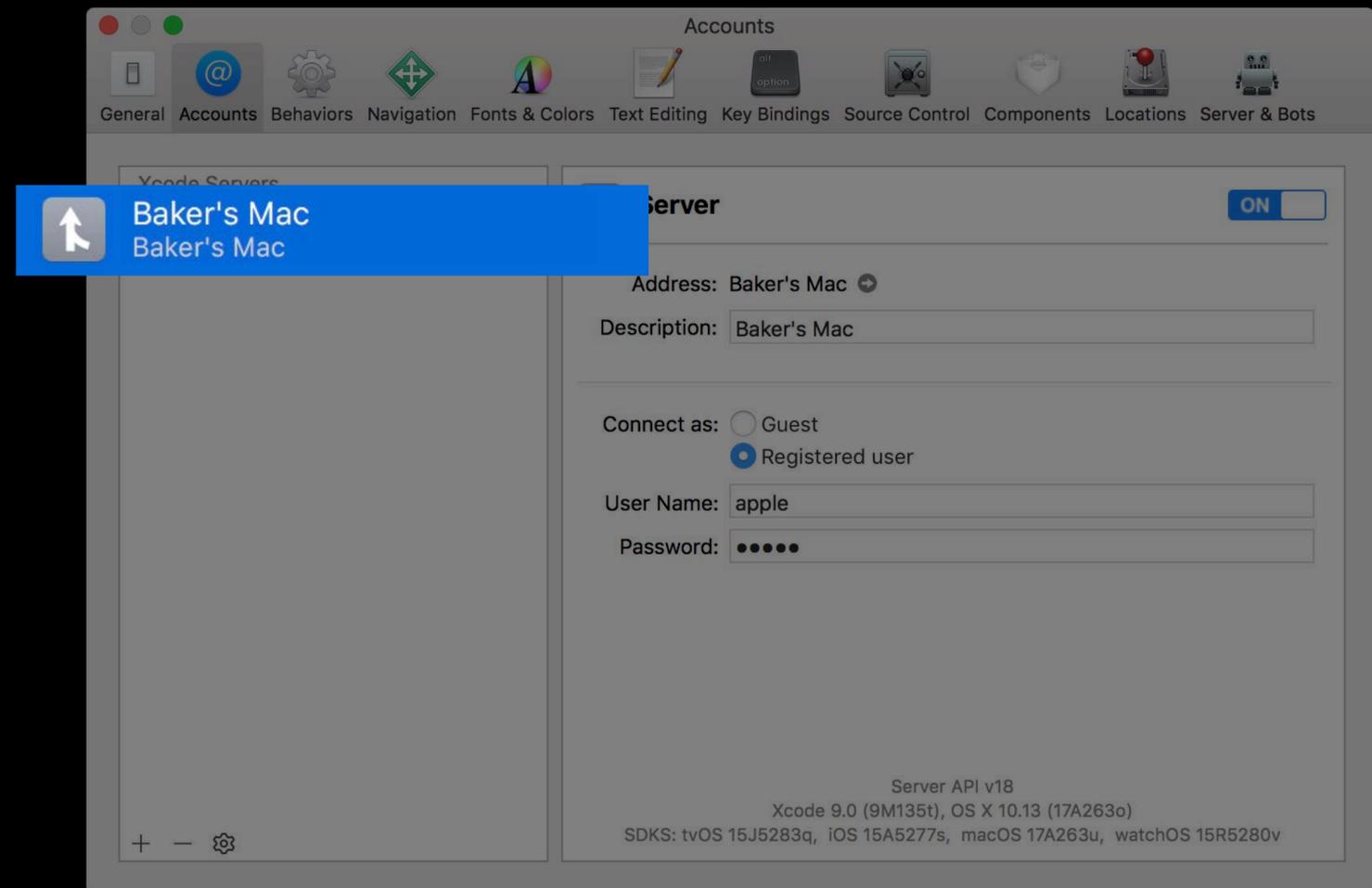
Add a client account in Preferences



Xcode Server

Setting up a client of the server

Add a client account in Preferences



Xcode Server

Setting up a bot

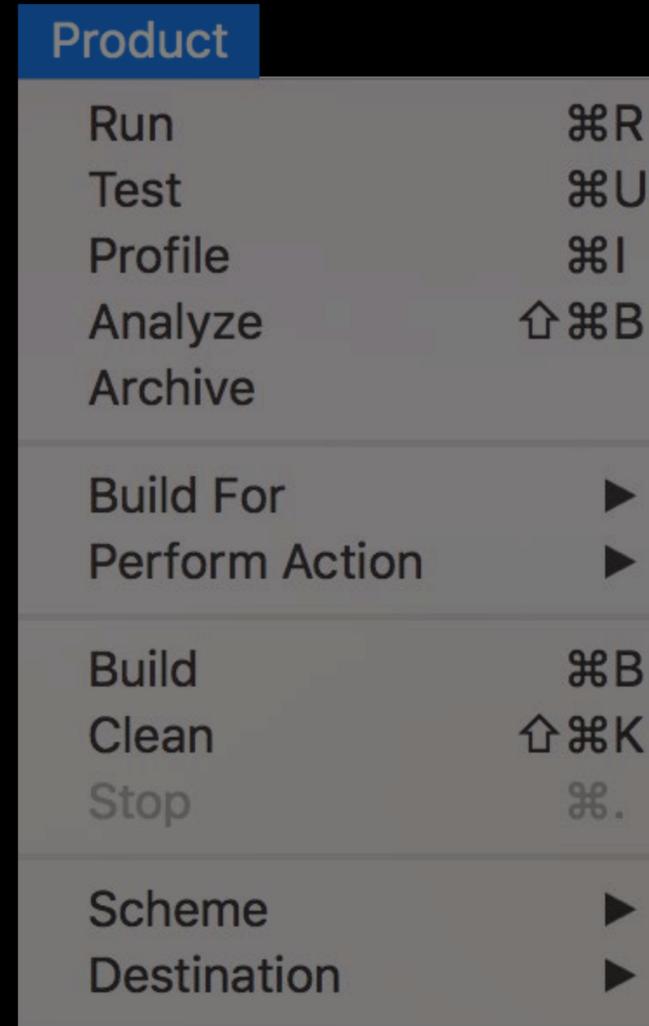
Add a bot from the Product menu



Xcode Server

Setting up a bot

Add a bot from the Product menu

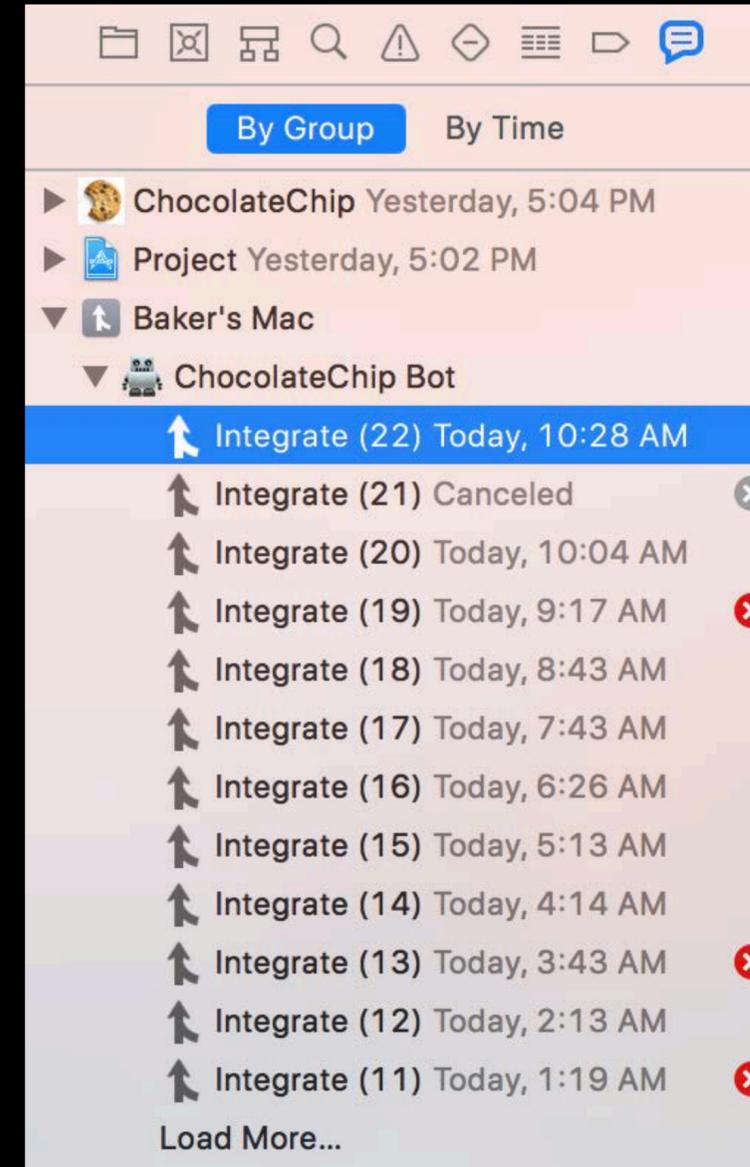


Create Bot...

Xcode Server

Viewing and editing your bot

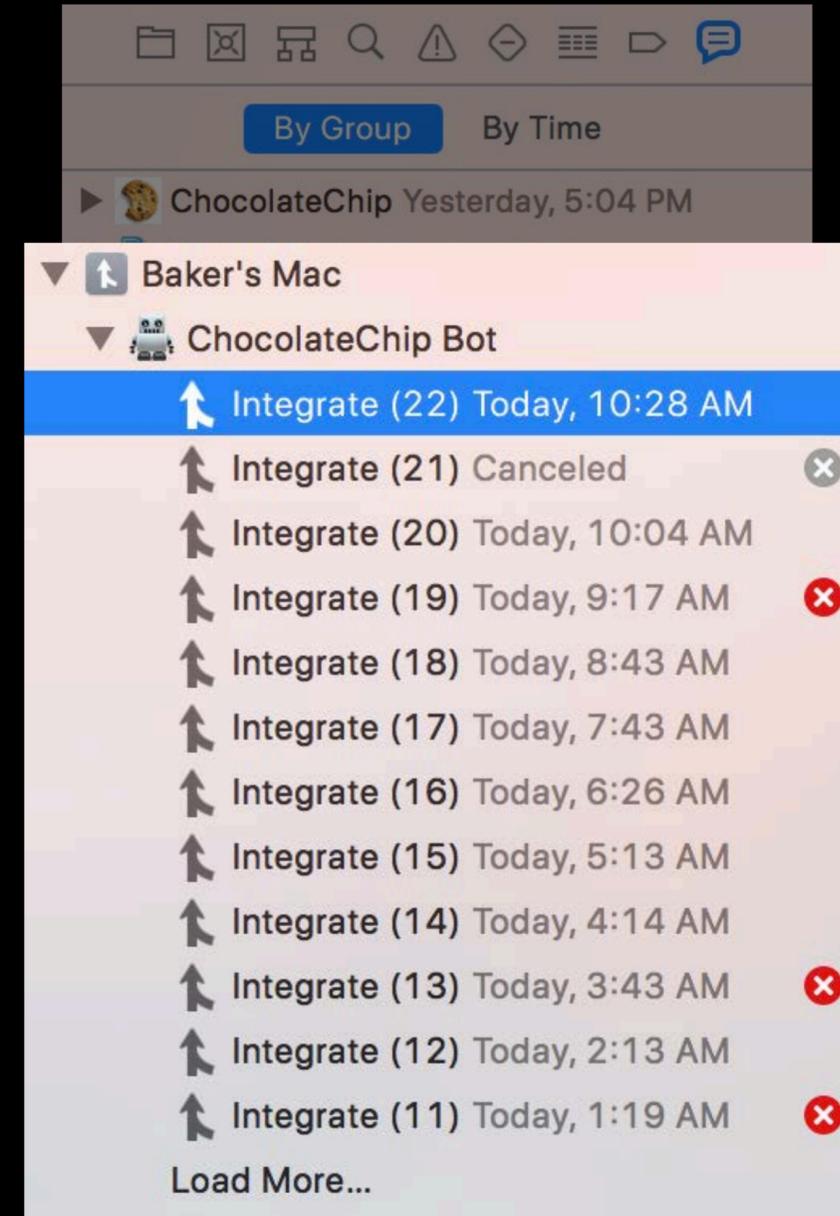
View and edit your bot in the Reports Navigator



Xcode Server

Viewing and editing your bot

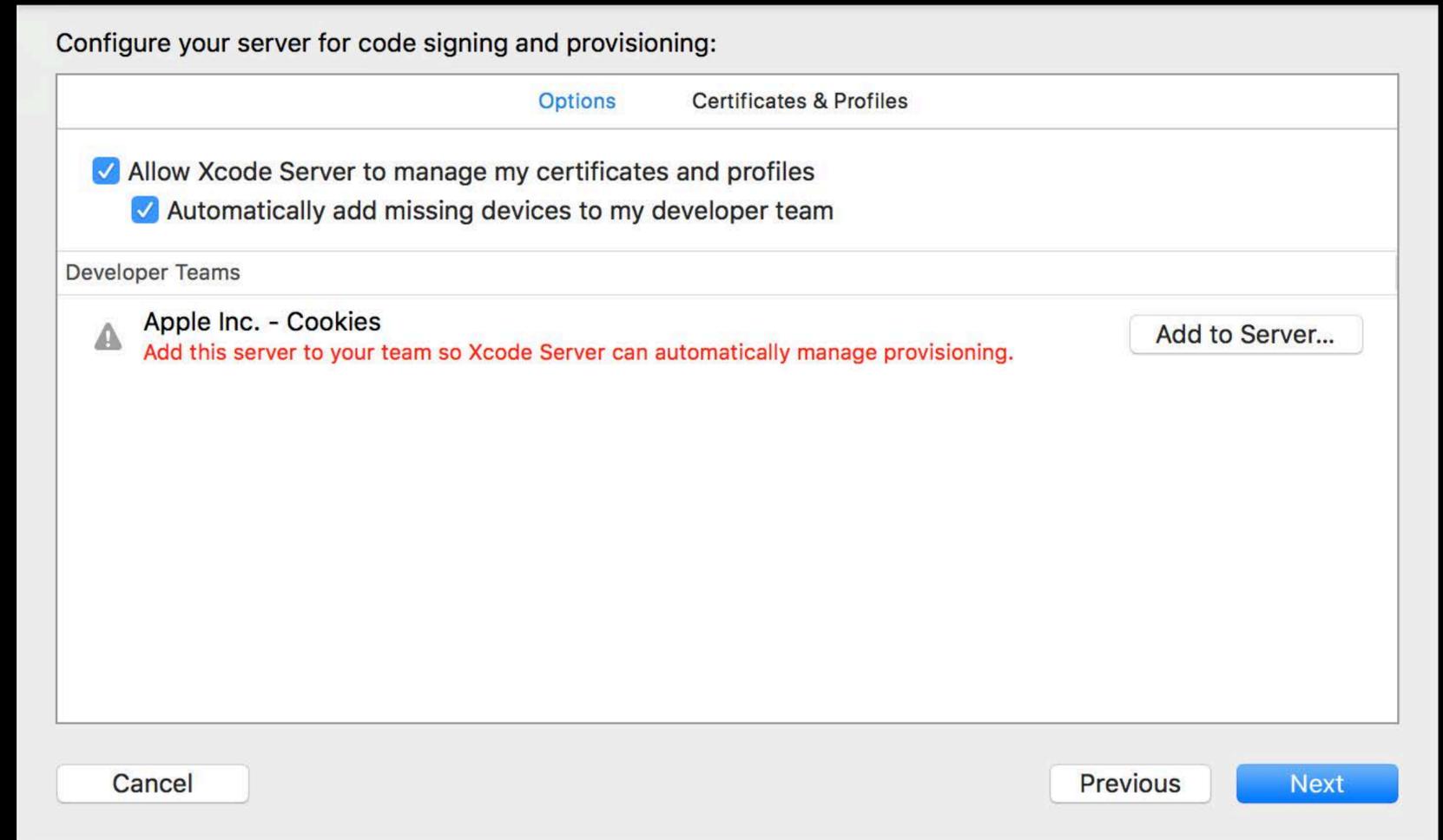
View and edit your bot in the Reports Navigator



Xcode Server

Configuring a bot for signing

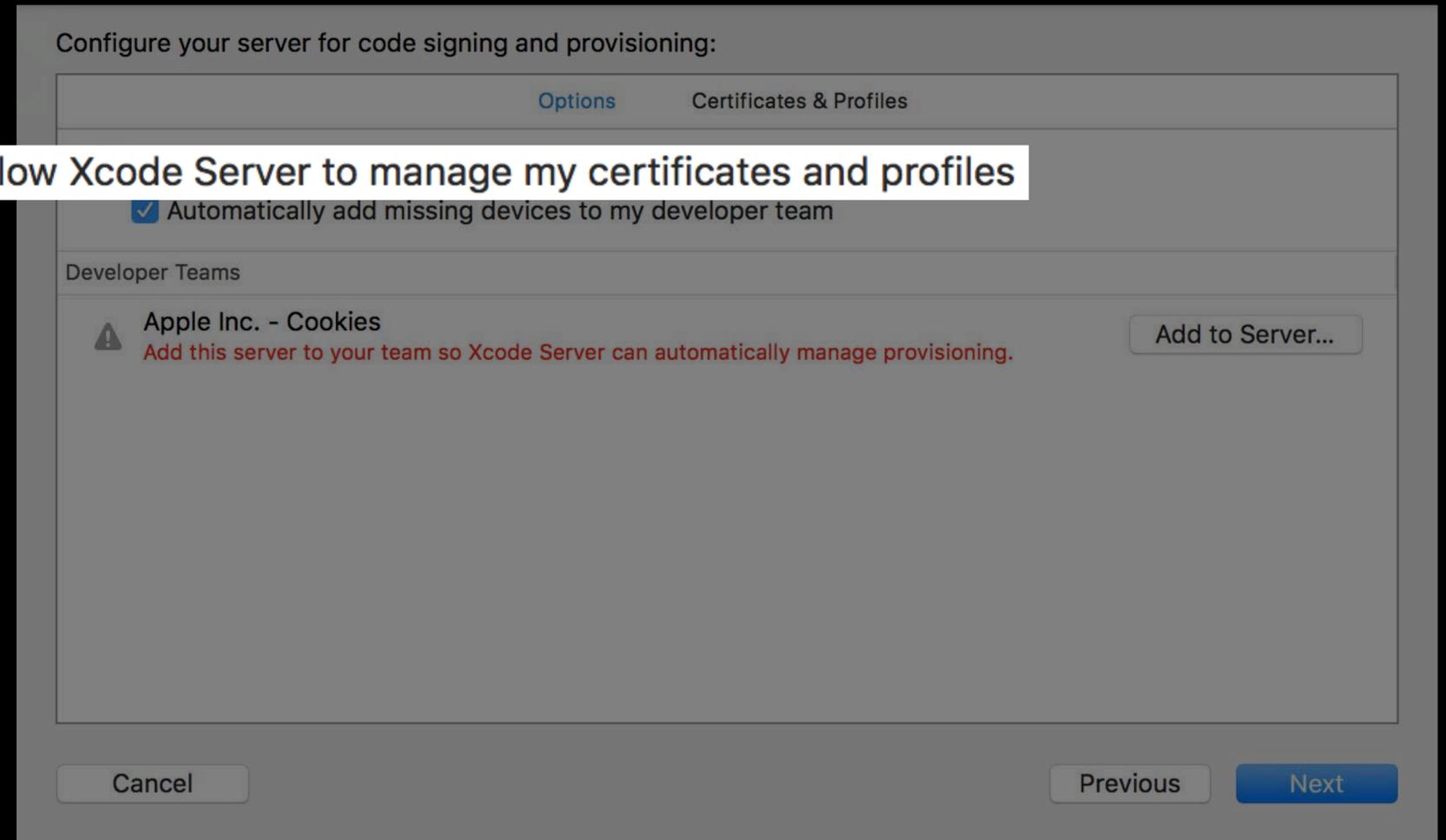
Authorize Xcode Server to use "Automatically manage signing for enabled targets"



Xcode Server

Configuring a bot for signing

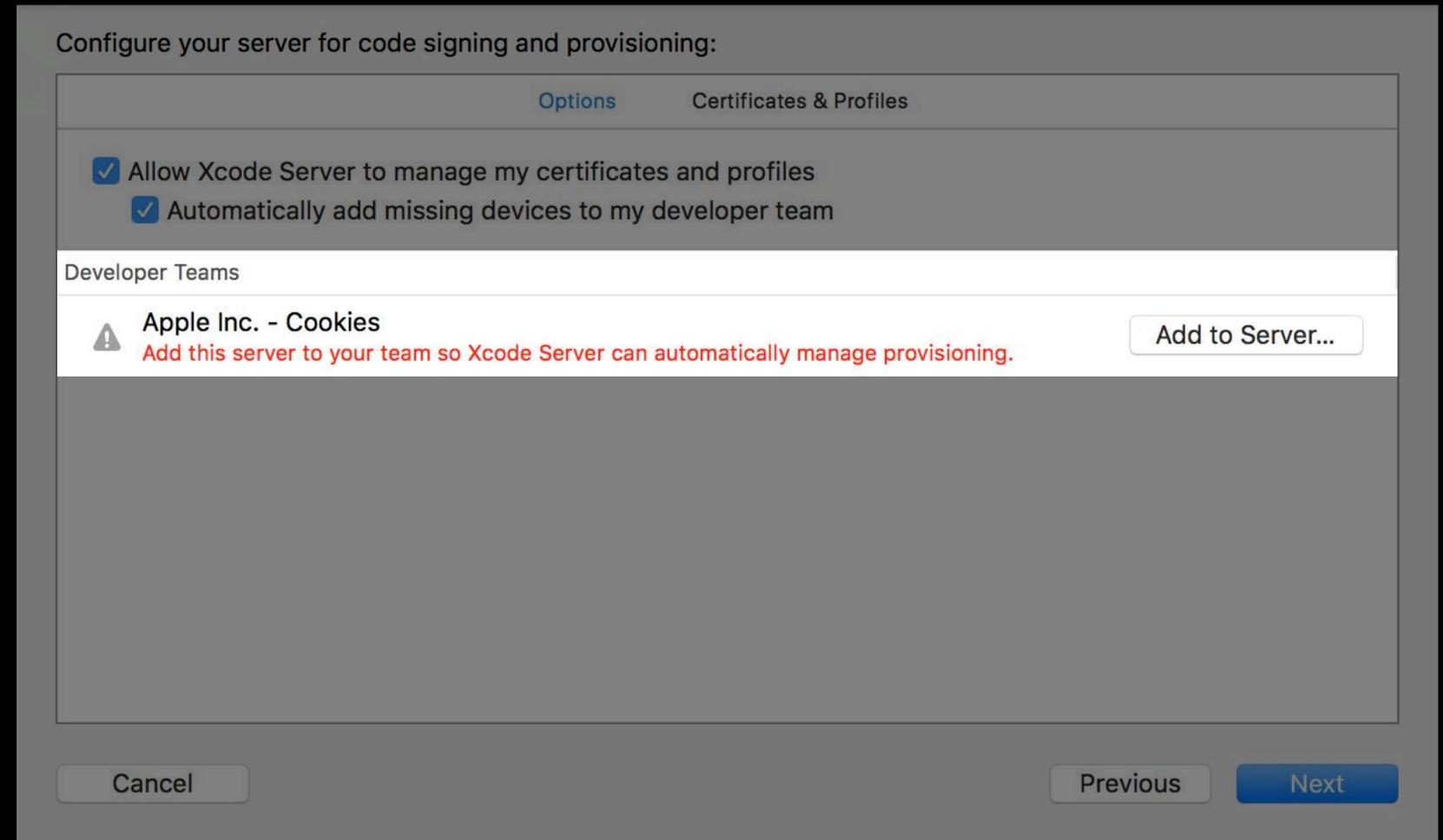
Authorize Xcode Server to use "Automatically manage signing for enabled targets"



Xcode Server

Configuring a bot for signing

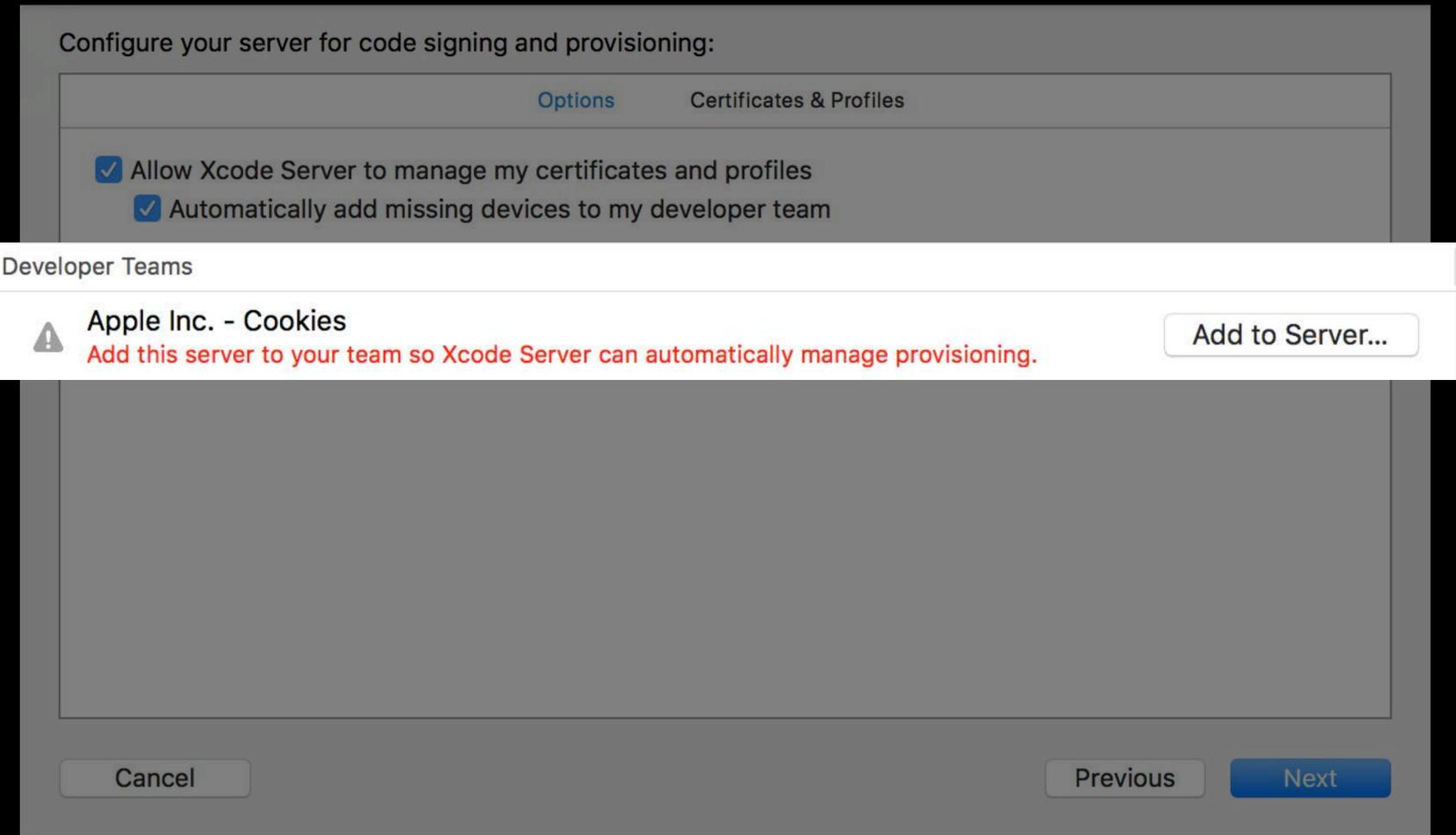
Xcode Server joins your team
for development signing



Xcode Server

Configuring a bot for signing

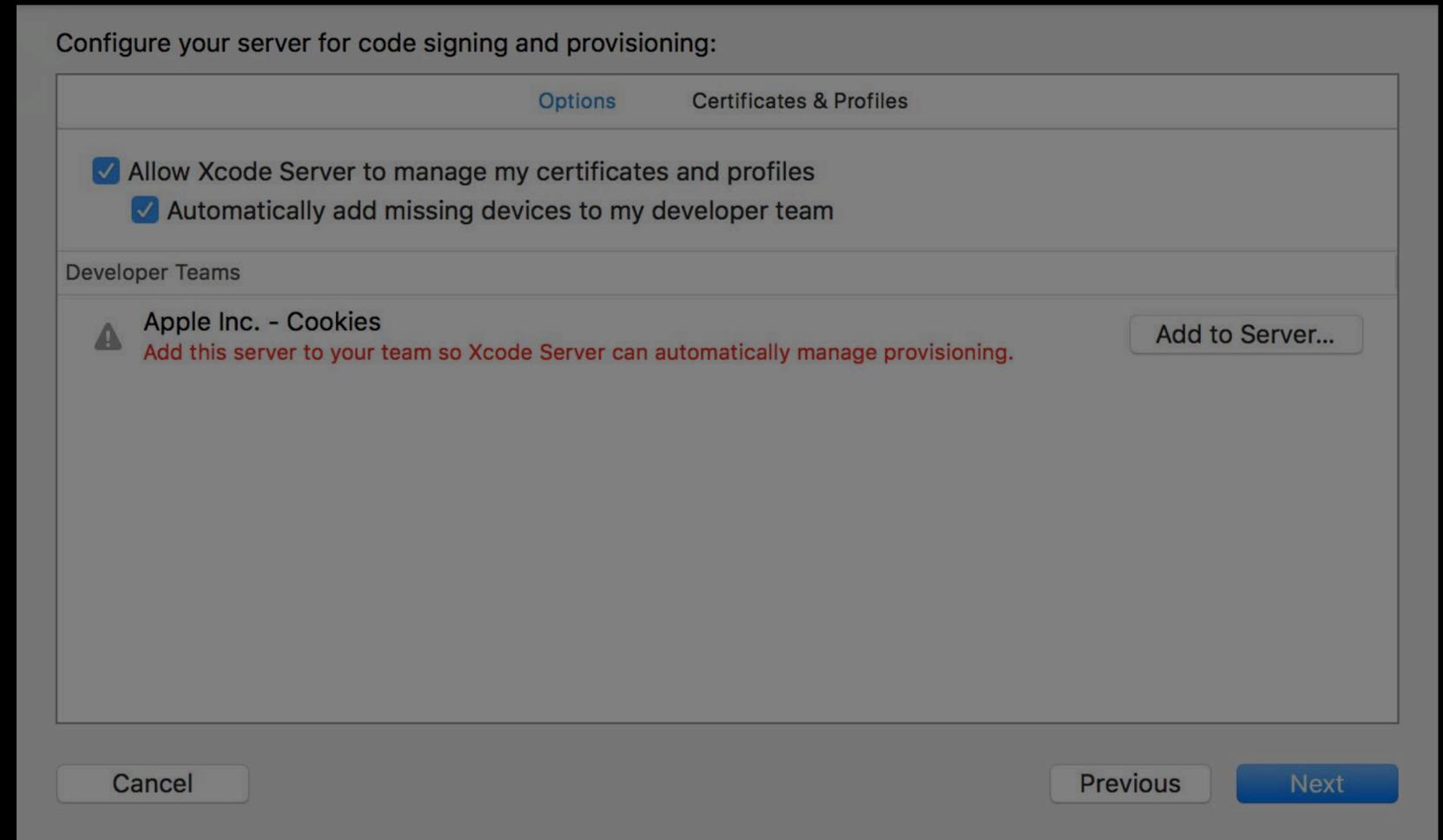
Xcode Server joins your team
for development signing



Xcode Server

Configuring a bot for signing

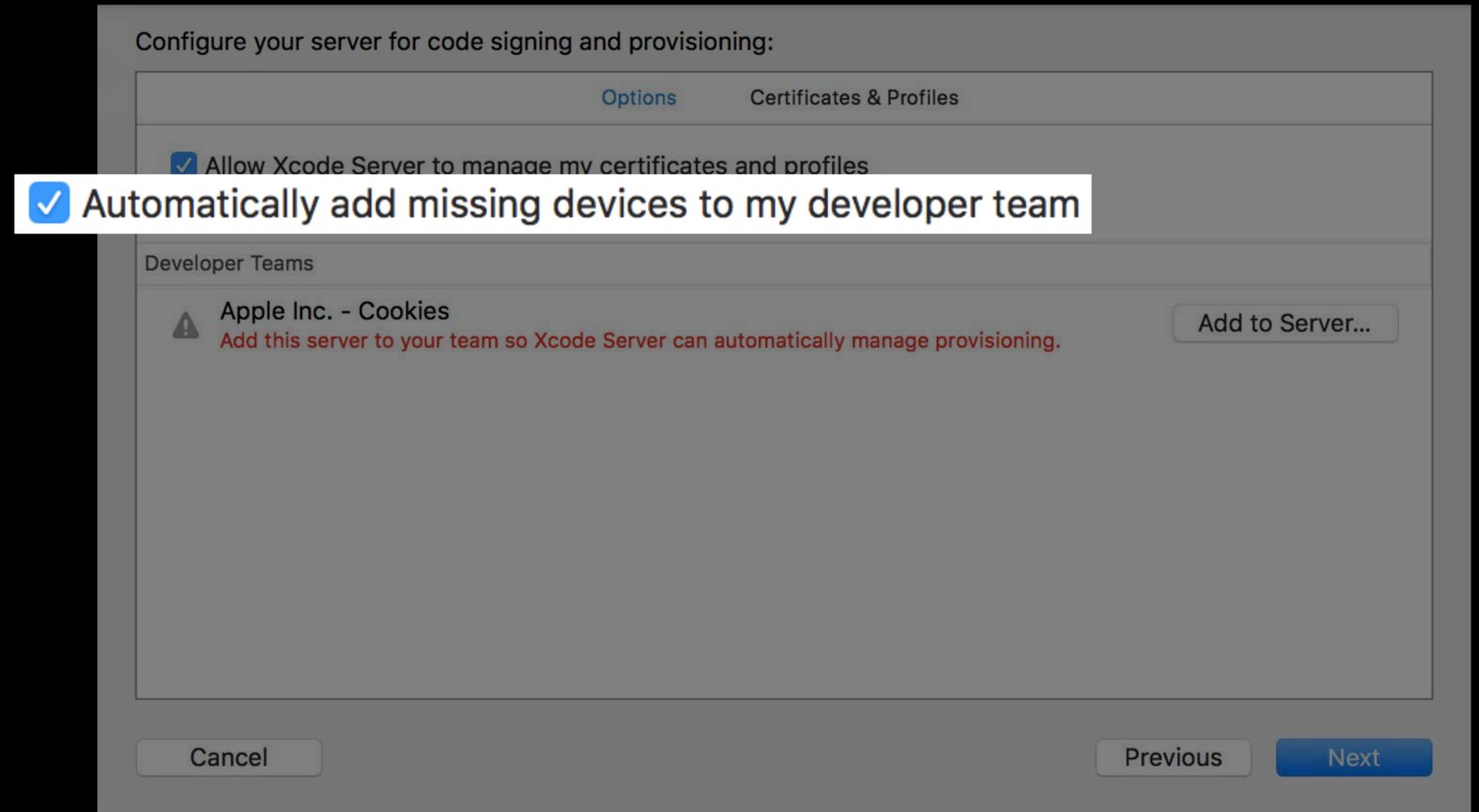
Allow "Automatically manage signing to auto-add devices"



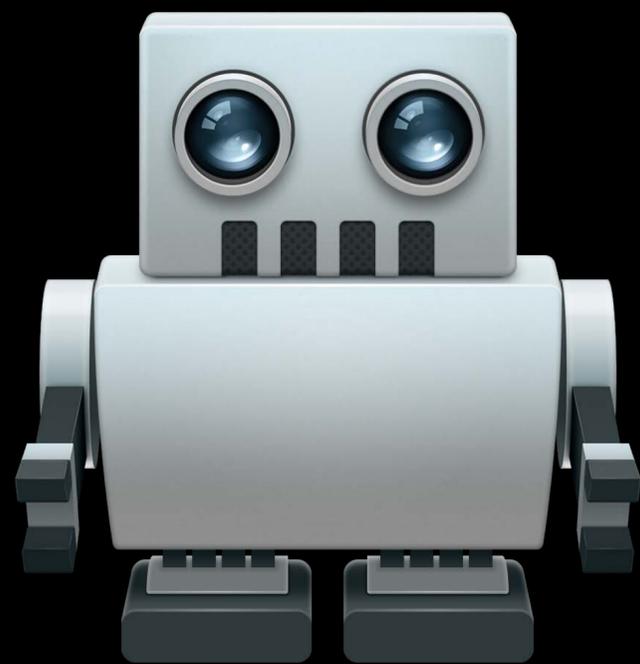
Xcode Server

Configuring a bot for signing

Allow "Automatically manage signing to auto-add devices"

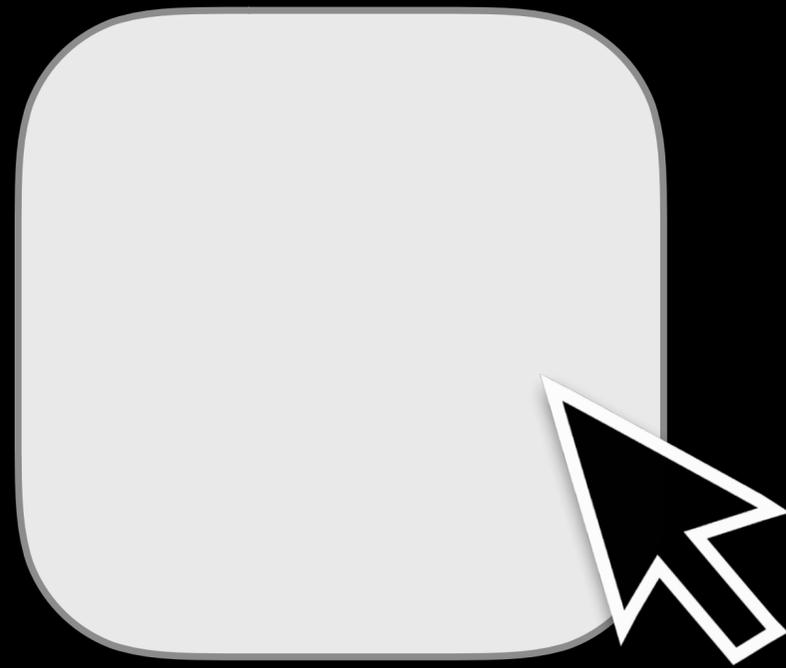


Demo





Automatic Signing



Improved Manual Signing

Manual Signing

Xcode improvements



Manual Signing

Xcode improvements

NEW

Manage certificates in the
accounts preferences

Signing certificates for "Apple Inc. - Cookies":

iOS Development Certificates	Creator	Date Created	Status
 Baker's Mac	Chris D'Angelo	5/26/17	Missing Private Key
 Baker's Macbook	Chris D'Angelo	5/26/17	Not in Keychain
 Baker's Mac	Chris D'Angelo	5/26/17	

iOS Distribution Certificates

 iOS Distribution	Brent Shank	5/26/17	Not in Keychain
---	-------------	---------	-----------------

+ ▾

Done

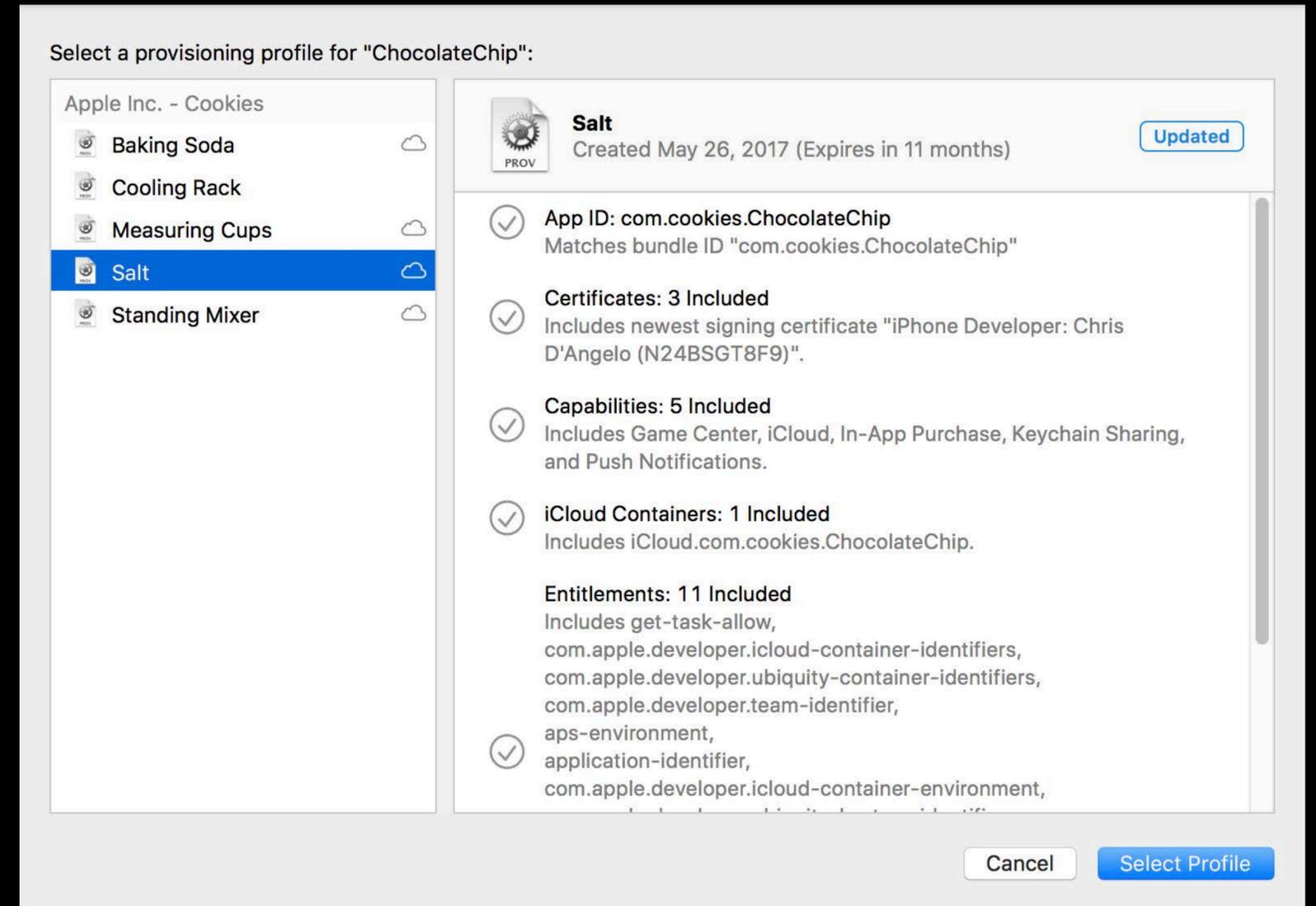
Manual Signing

Xcode improvements

NEW

Manage certificates in the accounts preferences

Preview and download profiles in the project editor



Manual Signing

Xcode improvements

NEW

Manage certificates in the
accounts preferences

Preview and download profiles in
the project editor



"Vanilla" profile is missing.

Download the profile from the developer website.

Cancel

Download All

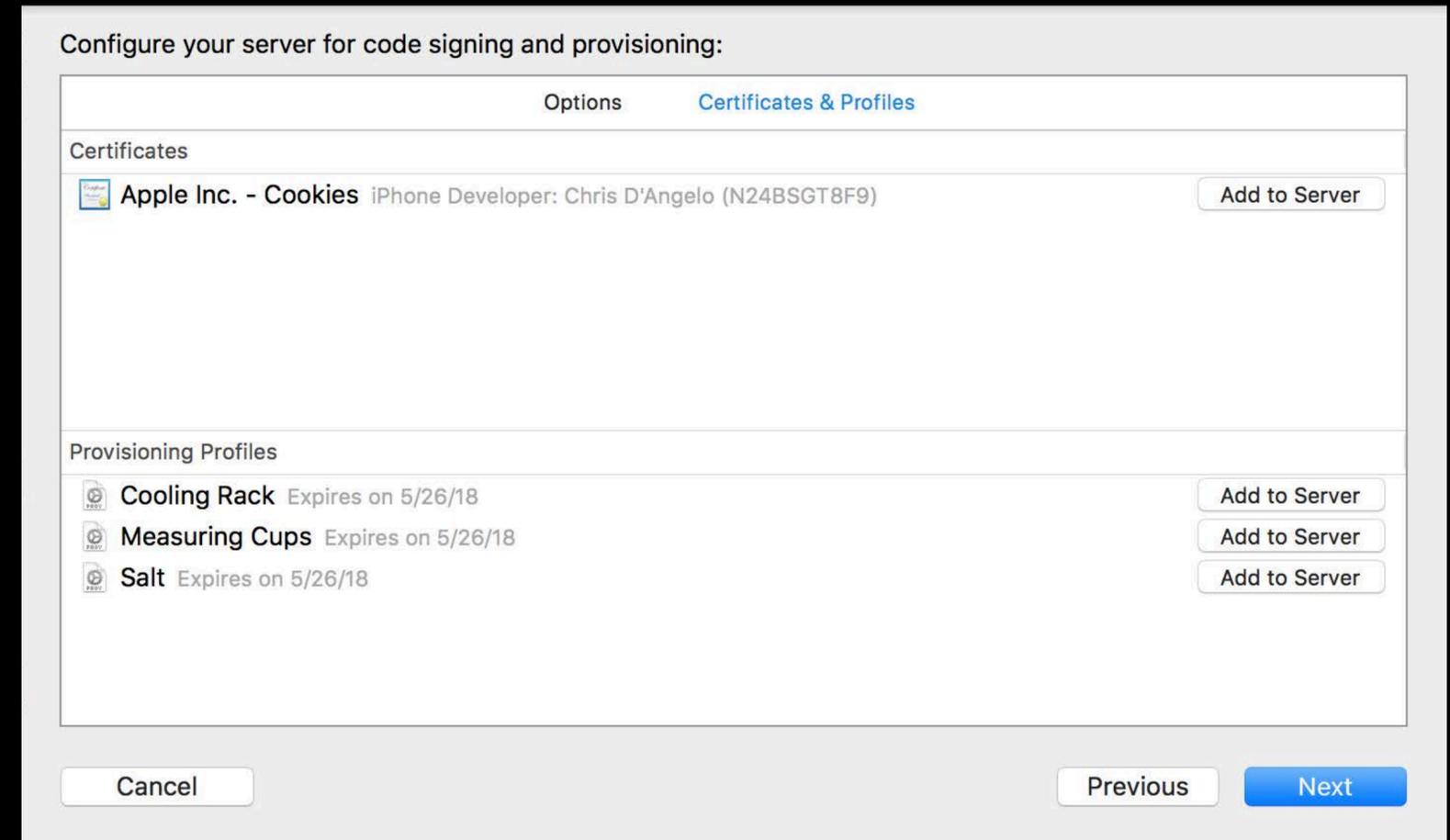
Download

Manual Signing

Xcode Server improvements



Copy Certificates and Profiles to server for manual signing



Manual Signing

Build settings

Manual Signing

Build settings

DEVELOPMENT_TEAM to set your team identifier

Manual Signing

Build settings

DEVELOPMENT_TEAM to set your team identifier

PROVISIONING_PROFILE_SPECIFIER to set your profile name

Manual Signing

Build settings

DEVELOPMENT_TEAM to set your team identifier

PROVISIONING_PROFILE_SPECIFIER to set your profile name

CODE_SIGN_IDENTITY to set your certificate

Manual Signing

Build settings



NEW

Manual Signing

Build settings



NEW

`CODE_SIGN_STYLE` to set automatic or manual

Manual Signing

Build settings



NEW

`CODE_SIGN_STYLE` to set automatic or manual

For advanced setups

Distributing Your App

Itai Rom, Xcode Engineer





Archive



Archive

Development signed (recommended)



Archive

Development signed (recommended)

Machine code and bitcode



Archive

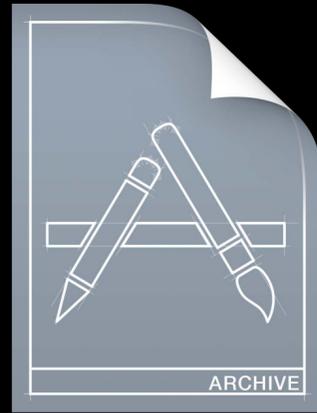
Development signed (recommended)

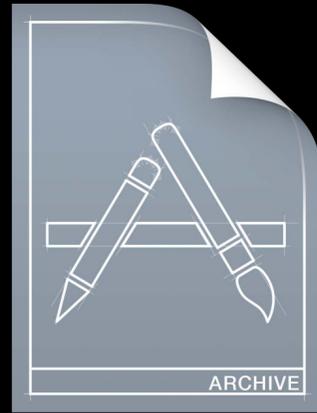
Machine code and bitcode

Debugging symbols



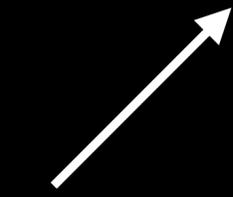


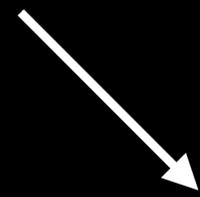
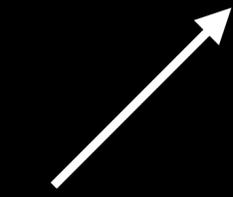




Distribution Signed







Distributing Your App

Choices during distribution

Distributing Your App

Choices during distribution

Distribution method

Distributing Your App

Choices during distribution

Distribution method

Signing, profiles, and entitlements

Distributing Your App

Choices during distribution

Distribution method

Signing, profiles, and entitlements

Bitcode and thinning

Distributing Your App

Choices during distribution

Distribution method

Signing, profiles, and entitlements

Bitcode and thinning

On demand resources

Distributing Your App

Choices during distribution

Distribution method

Signing, profiles, and entitlements

Bitcode and thinning

On demand resources

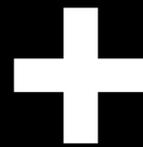
Symbols



Distribution



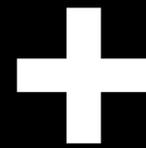
Automatic Signing



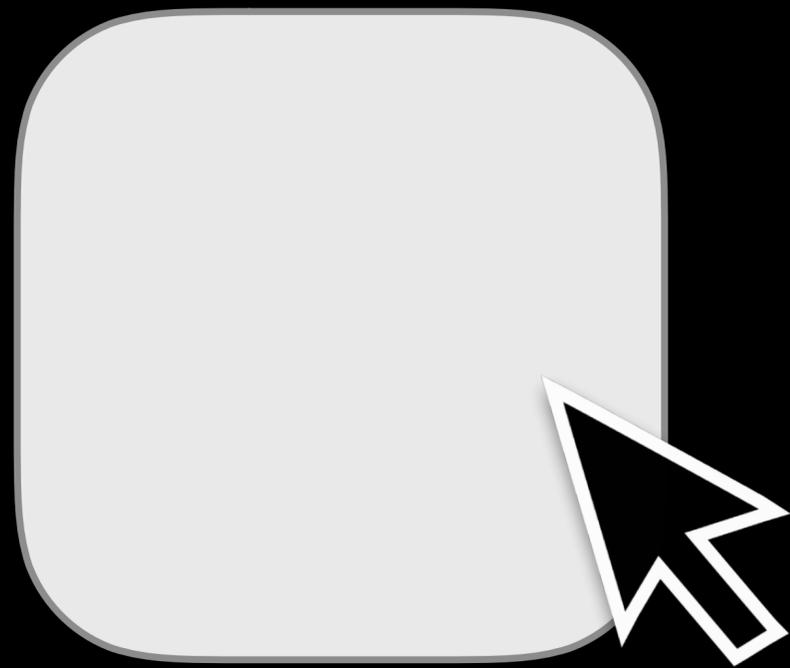
Distribution



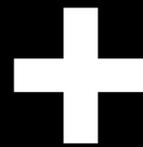
Automatic Signing



Distribution



Manual Signing



Distribution

Distributing Your App

NEW

Distributing Your App



NEW

Automatic and manual re-signing

Distributing Your App



NEW

Automatic and manual re-signing

Streamlined workflow

Distributing Your App



NEW

Automatic and manual re-signing

Streamlined workflow

Improved visibility and error presentation

Distributing Your App



NEW

Automatic and manual re-signing

Streamlined workflow

Improved visibility and error presentation

Enhanced export

Distributing Your App



NEW

Automatic and manual re-signing

Streamlined workflow

Improved visibility and error presentation

Enhanced export

Command line support

Distributing Your App

Automatic signing

Distributing Your App

Automatic signing

Signing works just like development signing

Distributing Your App

Automatic signing

Signing works just like development signing

Xcode-managed distribution profiles

Distributing Your App

Automatic signing

Signing works just like development signing

Xcode-managed distribution profiles

Create and share distribution certificates

Distributing Your App

Automatic signing

Signing works just like development signing

Xcode-managed distribution profiles

Create and share distribution certificates

Xcode never revokes distribution certificates

Distribution Improvements

Error handling

Missing private key:

! "Apple Inc. – Cookies" has 2 iOS Distribution certificates but their private keys are not installed. Contact the creator of one of these certificates to get a copy of the private key.

Certificate	Creator	Email
 Created 5/2/17	Gita Kumar	gkumar@icloud.com ↗
 Created 2/27/17	Ravi Patel	ravipatel@icloud.com ↗

Cancel

Manage Certificates...

Previous

Next

Distributing Your App

Enhanced export

Distributing Your App

Enhanced export

Your .ipa

Distributing Your App

Enhanced export

Your .ipa

DistributionSummary.plist

Distributing Your App

Enhanced export

Your .ipa

DistributionSummary.plist

Packaging.log

Distributing Your App

Enhanced export

Your .ipa

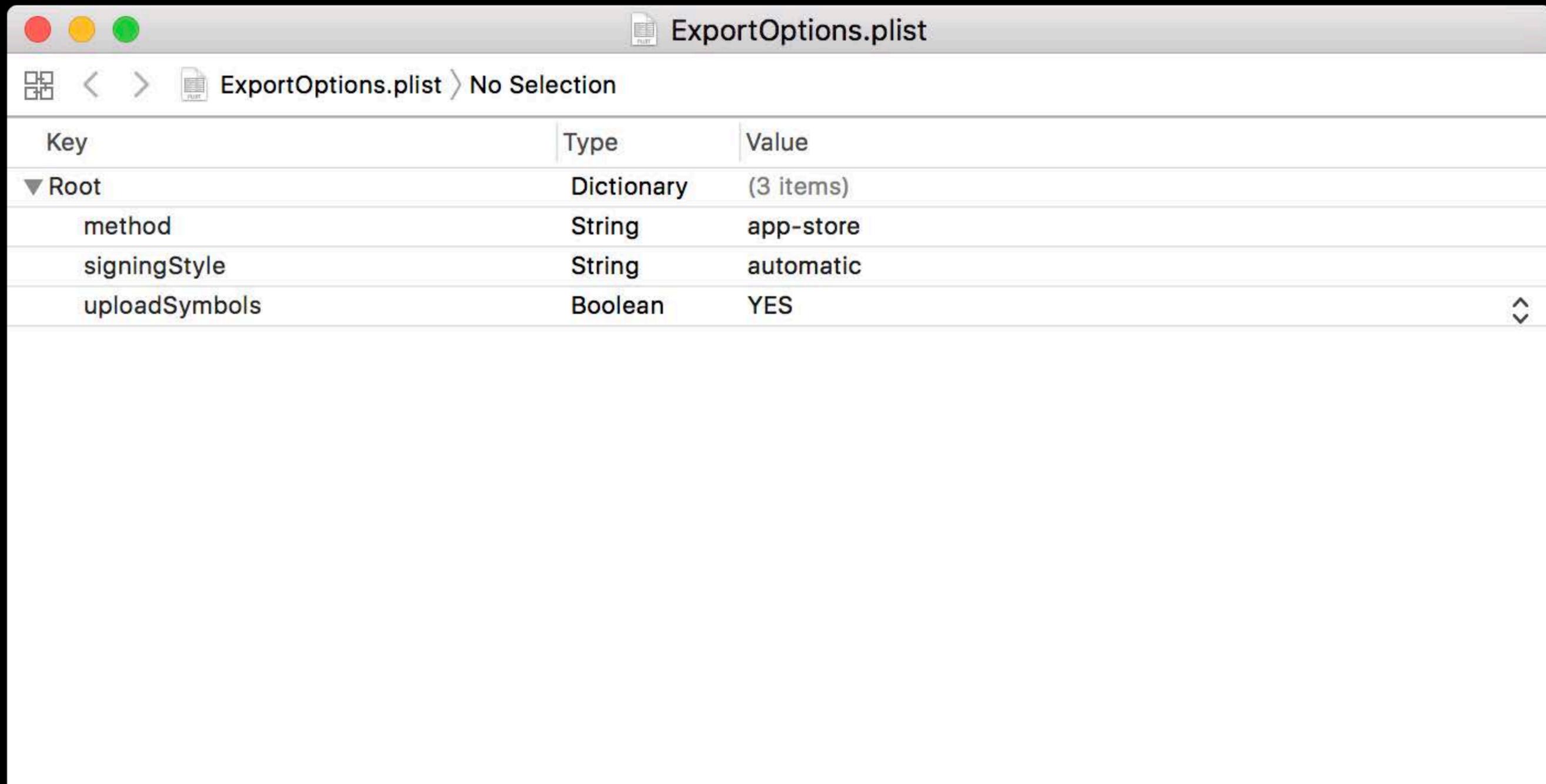
DistributionSummary.plist

Packaging.log

ExportOptions.plist

Distributing Your App

Command line support



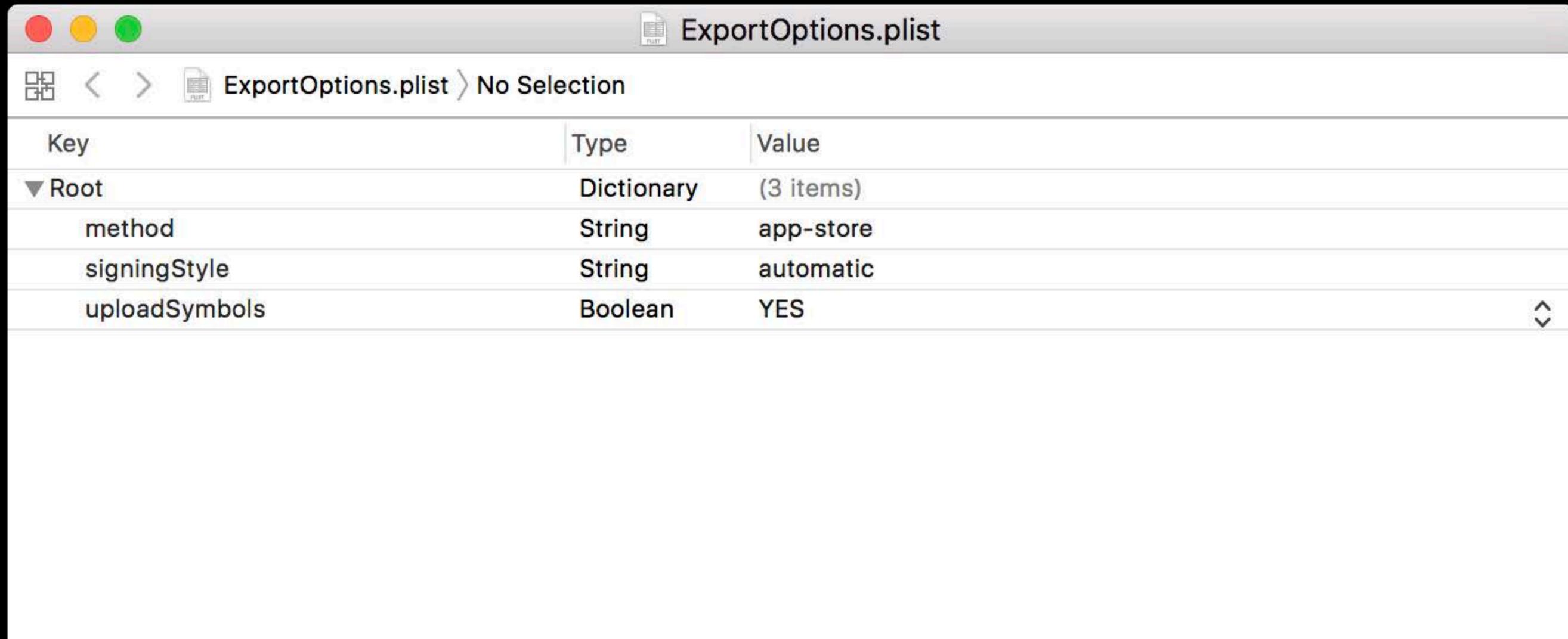
The screenshot shows a macOS window titled "ExportOptions.plist" with a standard title bar (red, yellow, green buttons). The window content displays a table with three columns: "Key", "Type", and "Value". The table lists three items under a "Root" key:

Key	Type	Value
▼ Root	Dictionary	(3 items)
method	String	app-store
signingStyle	String	automatic
uploadSymbols	Boolean	YES

Distributing Your App

Command line support

```
xcodebuild -exportArchive  
-archivePath your.xcarchive  
-exportOptionsPlist ExportOptions.plist
```



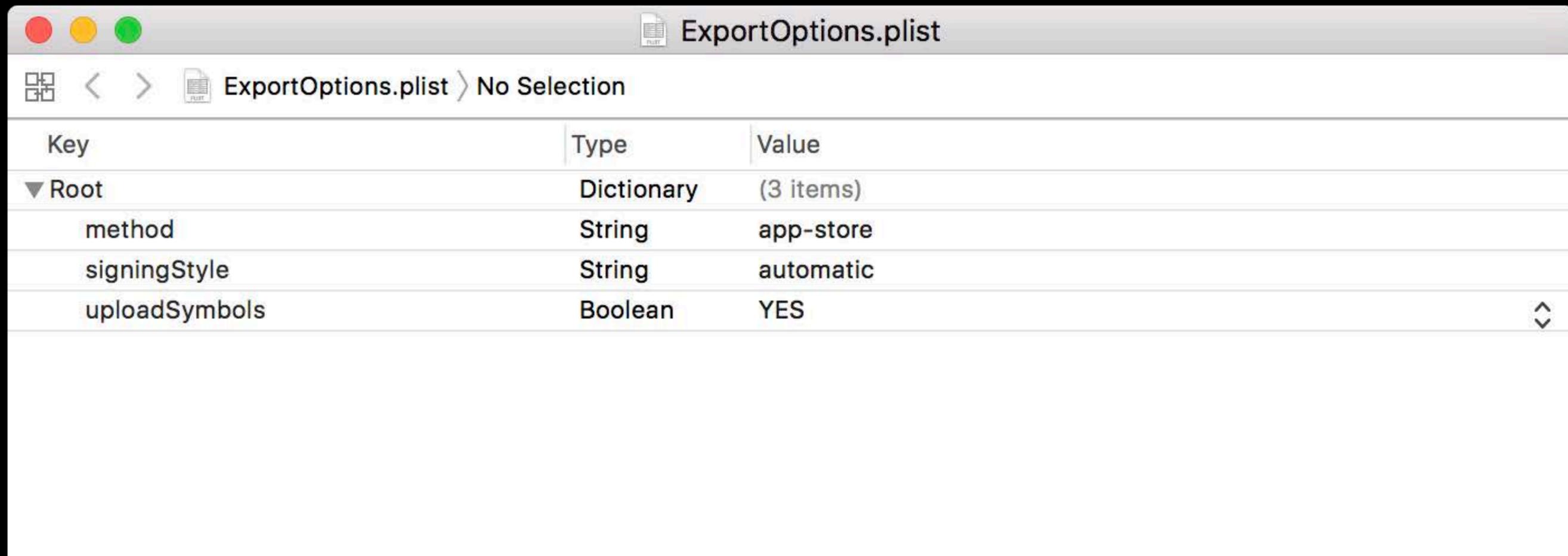
The screenshot shows a macOS window titled "ExportOptions.plist" with a table of export options. The table has three columns: "Key", "Type", and "Value". The "Root" key is expanded to show three items: "method" (String, app-store), "signingStyle" (String, automatic), and "uploadSymbols" (Boolean, YES). A double-headed arrow is visible at the end of the "uploadSymbols" row.

Key	Type	Value
▼ Root	Dictionary	(3 items)
method	String	app-store
signingStyle	String	automatic
uploadSymbols	Boolean	YES

Distributing Your App

Command line support

```
xcodebuild -exportArchive  
-archivePath your.xcarchive  
-exportOptionsPlist ExportOptions.plist  
-allowProvisioningUpdates
```



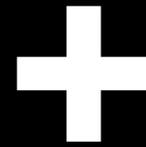
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Key	Type	Value
▼ Root	Dictionary	(3 items)
method	String	app-store
signingStyle	String	automatic
uploadSymbols	Boolean	YES

Demo



Manual Signing



Distribution

Distributing Your App

Manual signing

Distributing Your App

Manual signing

Select certificates and provisioning profiles

Distributing Your App

Manual signing

Select certificates and provisioning profiles

Xcode won't create or modify manual profiles

Distributing Your App

Manual signing

Select certificates and provisioning profiles

Xcode won't create or modify manual profiles

Works with xcodebuild

Distributing Your App

Manual signing

Select certificates and provisioning profiles

Xcode won't create or modify manual profiles

Works with xcodebuild

Required if archive was manually signed

Distributing Your App

Manual distribution signing

Distributing Your App

Manual distribution signing

Re-sign your app:

Your app needs to be re-signed for App Store distribution. Select one of the following signing options to continue.

- Automatically manage signing
Xcode will create and update profiles, app IDs, and certificates.
- Manually manage signing
Select certificates and profiles created on the developer website.



Distributing Your App

Manual distribution signing

Select certificate and iOS App Store profiles:

Team: Apple Inc. – Xcode Services 02

Distribution certificate:

ChocolateChip.app: ⓘ

Flour.framework: No profile required

Eggs.appex:

Sugar.app:

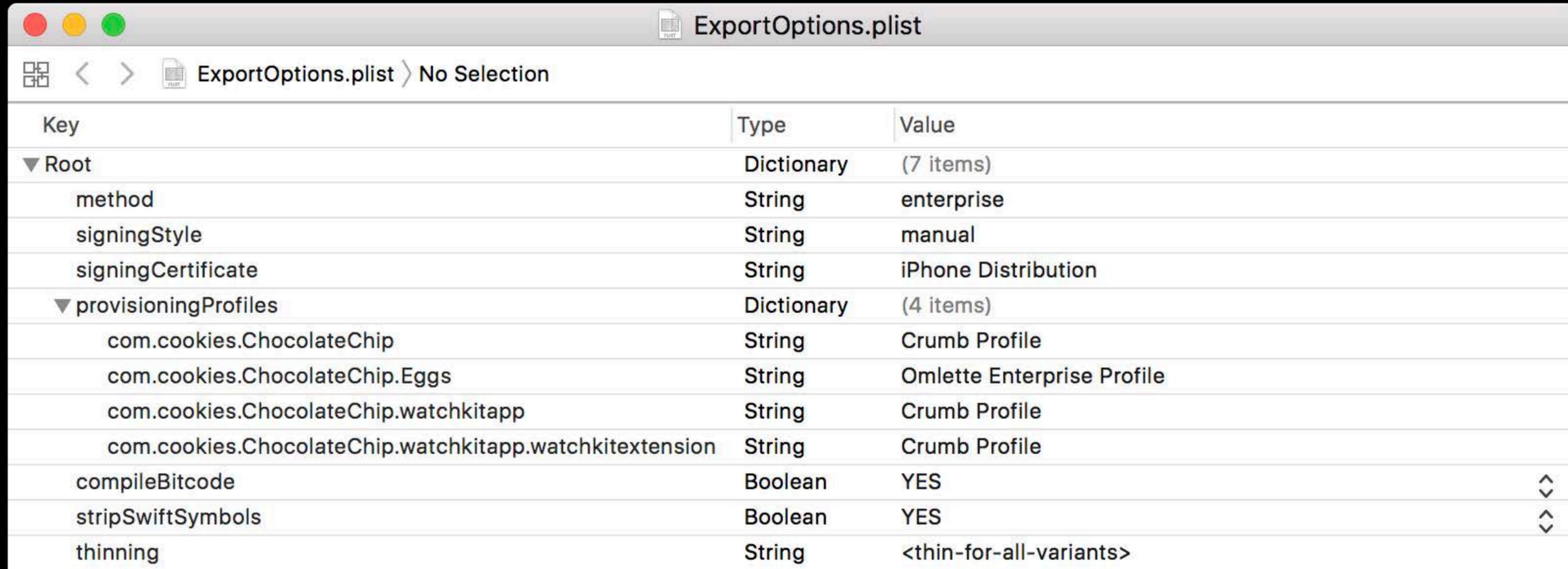
Sugar Extension.appex:

?

Cancel Previous Next

Distributing Your App

Manual distribution signing with xcodebuild

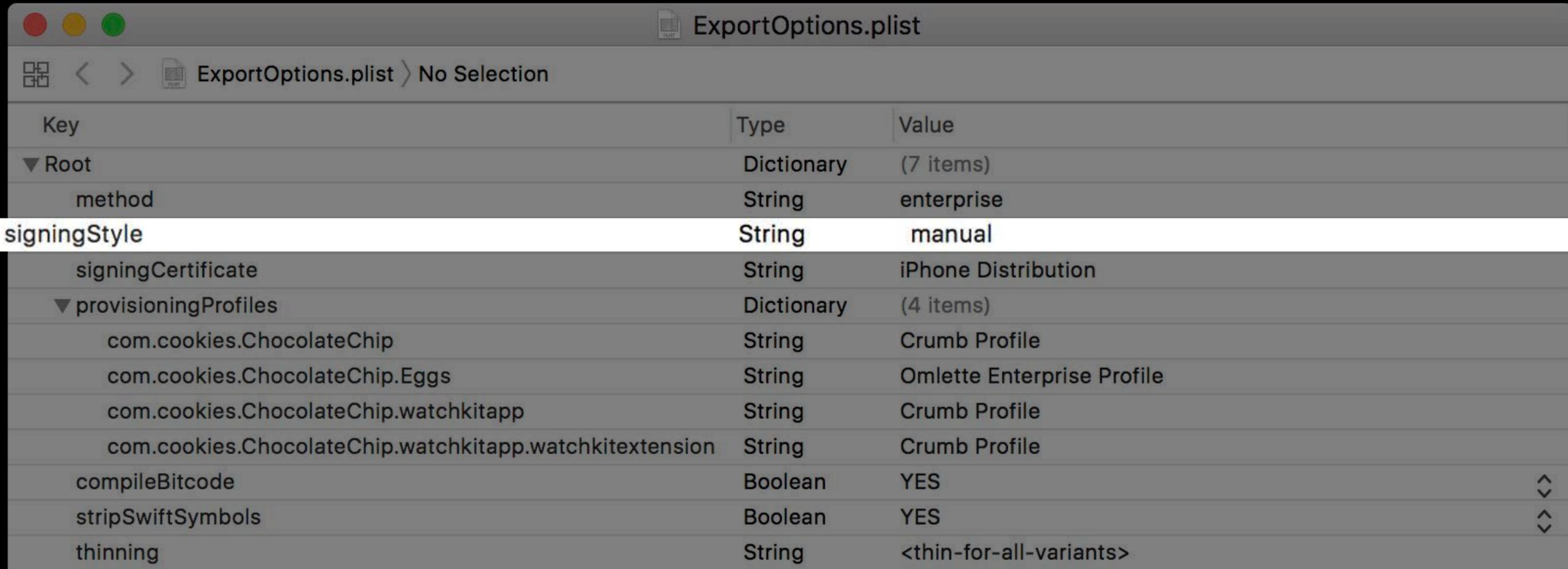


The screenshot shows a macOS window titled "ExportOptions.plist" with a table of export options. The table has three columns: "Key", "Type", and "Value". The "Key" column is expanded to show a tree structure. The "Type" column lists the data type for each key, and the "Value" column lists the corresponding value. Some keys have expandable arrows on the right side of their values.

Key	Type	Value
▼ Root	Dictionary	(7 items)
method	String	enterprise
signingStyle	String	manual
signingCertificate	String	iPhone Distribution
▼ provisioningProfiles	Dictionary	(4 items)
com.cookies.ChocolateChip	String	Crumb Profile
com.cookies.ChocolateChip.Eggs	String	Omlette Enterprise Profile
com.cookies.ChocolateChip.watchkitapp	String	Crumb Profile
com.cookies.ChocolateChip.watchkitapp.watchkitextension	String	Crumb Profile
compileBitcode	Boolean	YES 
stripSwiftSymbols	Boolean	YES 
thinning	String	<thin-for-all-variants>

Distributing Your App

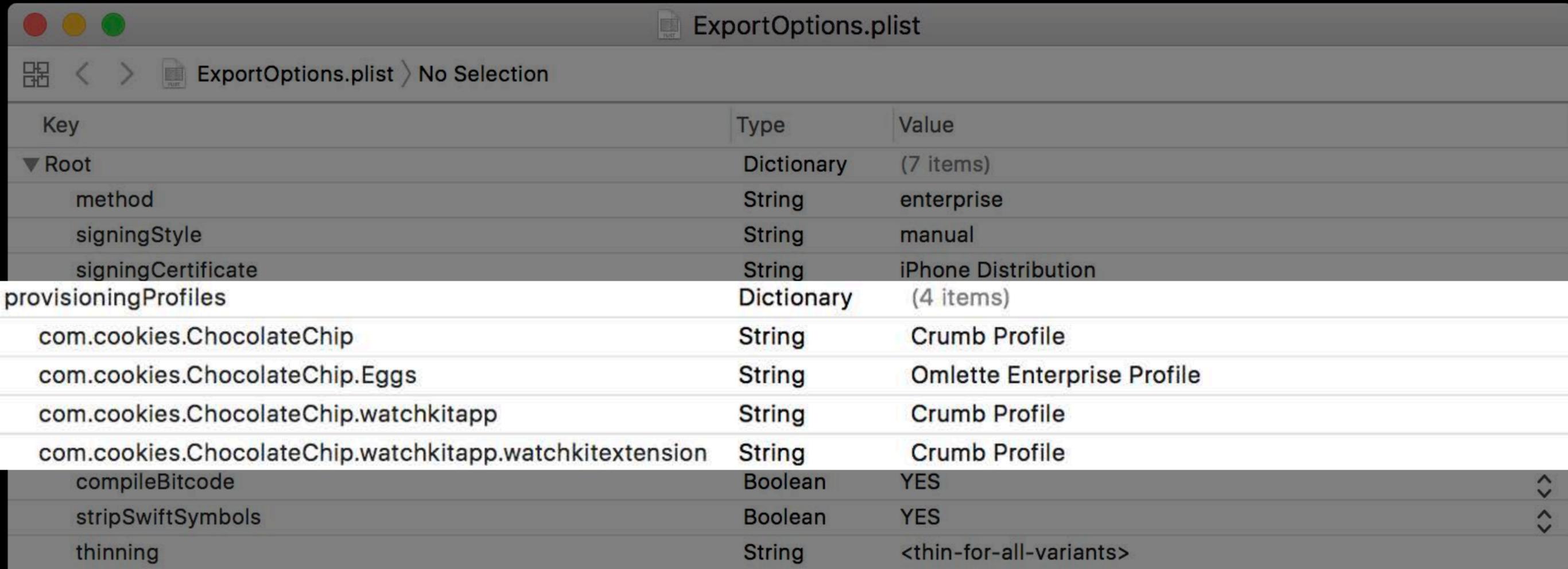
Manual distribution signing with xcodebuild



Key	Type	Value
Root	Dictionary	(7 items)
method	String	enterprise
signingStyle	String	manual
signingCertificate	String	iPhone Distribution
provisioningProfiles	Dictionary	(4 items)
com.cookies.ChocolateChip	String	Crumb Profile
com.cookies.ChocolateChip.Eggs	String	Omlette Enterprise Profile
com.cookies.ChocolateChip.watchkitapp	String	Crumb Profile
com.cookies.ChocolateChip.watchkitapp.watchkitextension	String	Crumb Profile
compileBitcode	Boolean	YES
stripSwiftSymbols	Boolean	YES
thinning	String	<thin-for-all-variants>

Distributing Your App

Manual distribution signing with xcodebuild



The image shows a screenshot of the Xcode interface displaying the 'ExportOptions.plist' file. The window title is 'ExportOptions.plist'. The breadcrumb navigation shows 'ExportOptions.plist > No Selection'. The main content is a table with three columns: 'Key', 'Type', and 'Value'. The table is organized into a hierarchy starting with 'Root' (Dictionary, 7 items). Under 'Root', there are keys for 'method' (String, enterprise), 'signingStyle' (String, manual), and 'signingCertificate' (String, iPhone Distribution). A section titled 'provisioningProfiles' (Dictionary, 4 items) is expanded, showing four entries: 'com.cookies.ChocolateChip' (String, Crumb Profile), 'com.cookies.ChocolateChip.Eggs' (String, Omlette Enterprise Profile), 'com.cookies.ChocolateChip.watchkitapp' (String, Crumb Profile), and 'com.cookies.ChocolateChip.watchkitapp.watchkitextension' (String, Crumb Profile). Below this, other keys include 'compileBitcode' (Boolean, YES), 'stripSwiftSymbols' (Boolean, YES), and 'thinning' (String, <thin-for-all-variants>).

Key	Type	Value
▼ Root	Dictionary	(7 items)
method	String	enterprise
signingStyle	String	manual
signingCertificate	String	iPhone Distribution
▼ provisioningProfiles	Dictionary	(4 items)
com.cookies.ChocolateChip	String	Crumb Profile
com.cookies.ChocolateChip.Eggs	String	Omlette Enterprise Profile
com.cookies.ChocolateChip.watchkitapp	String	Crumb Profile
com.cookies.ChocolateChip.watchkitapp.watchkitextension	String	Crumb Profile
compileBitcode	Boolean	YES
stripSwiftSymbols	Boolean	YES
thinning	String	<thin-for-all-variants>

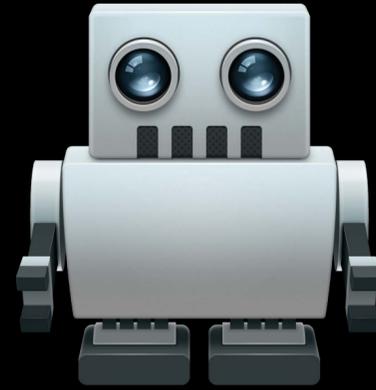
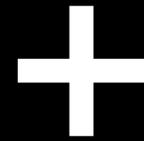


Distribution Signing with Xcode Server

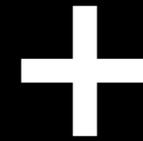
Brent Shank, Xcode Engineer



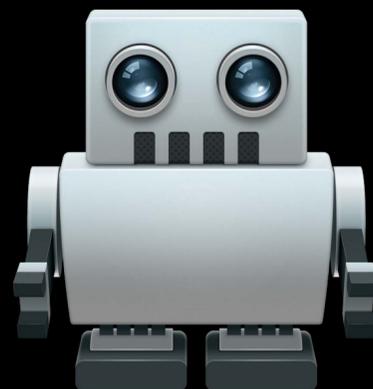
Automatic Signing

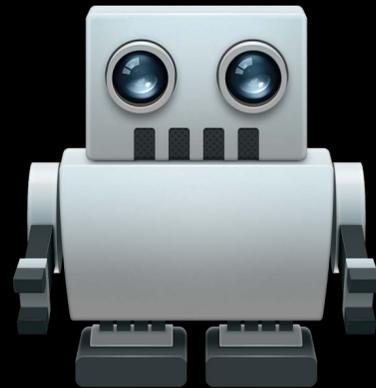


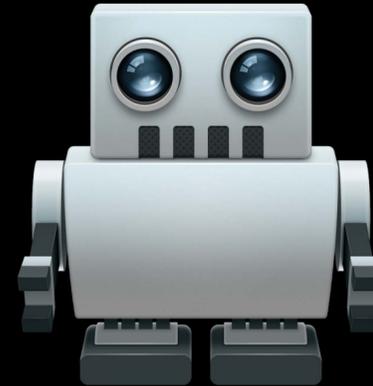
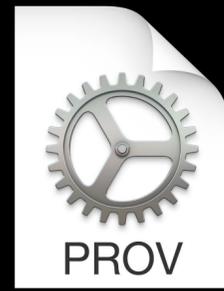
Xcode Server



Distribution

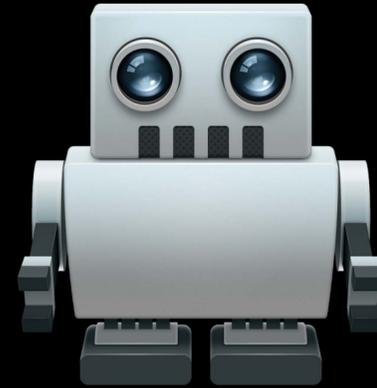
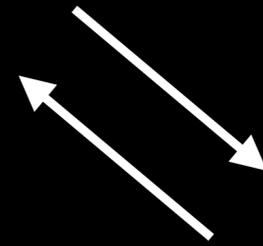
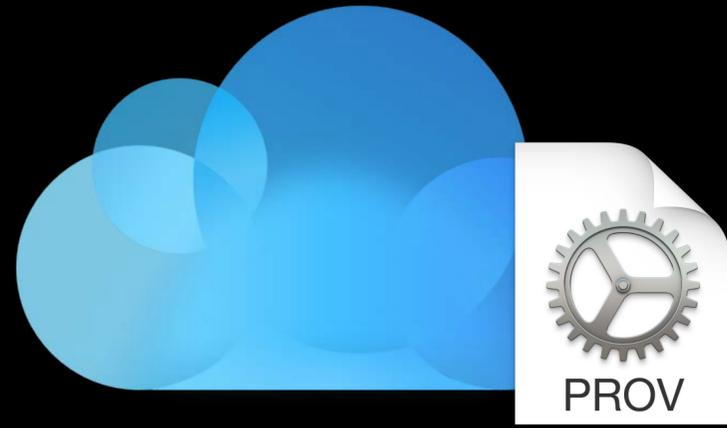






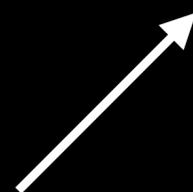
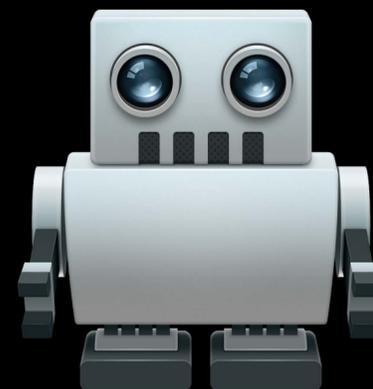
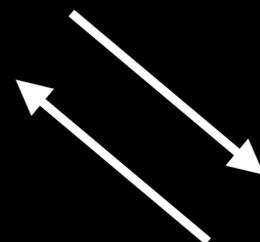


Automatic Signing





Automatic Signing



Xcode Server

Distribution signing



NEW

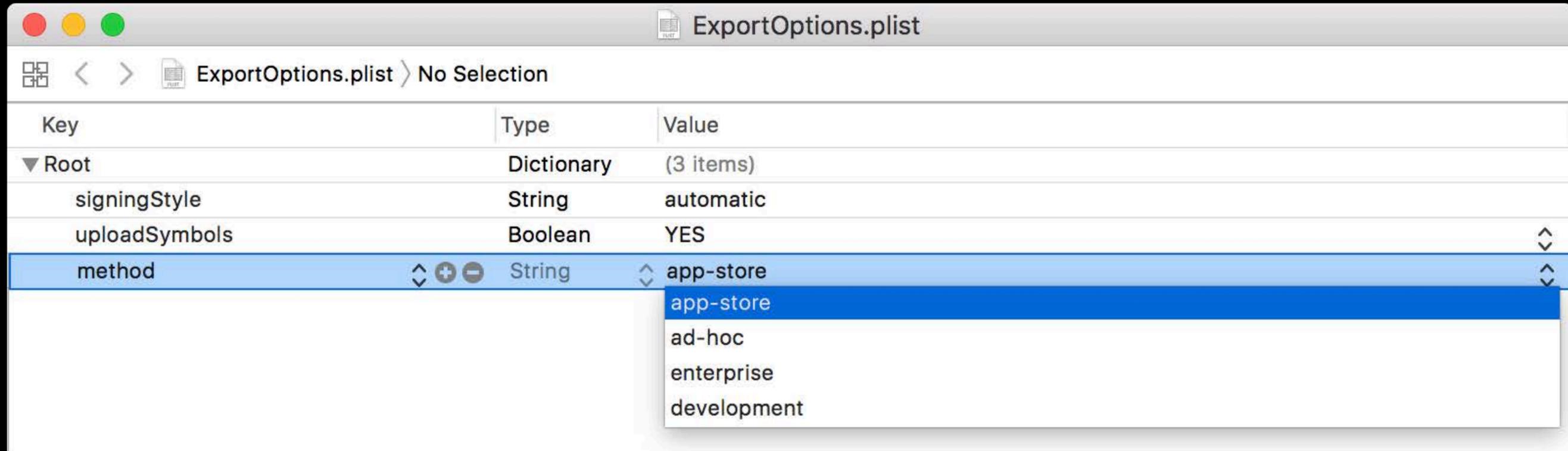
Copy distribution certificates to server

Automatic signing creates and updates distribution profiles

Upload ExportOptions.plist

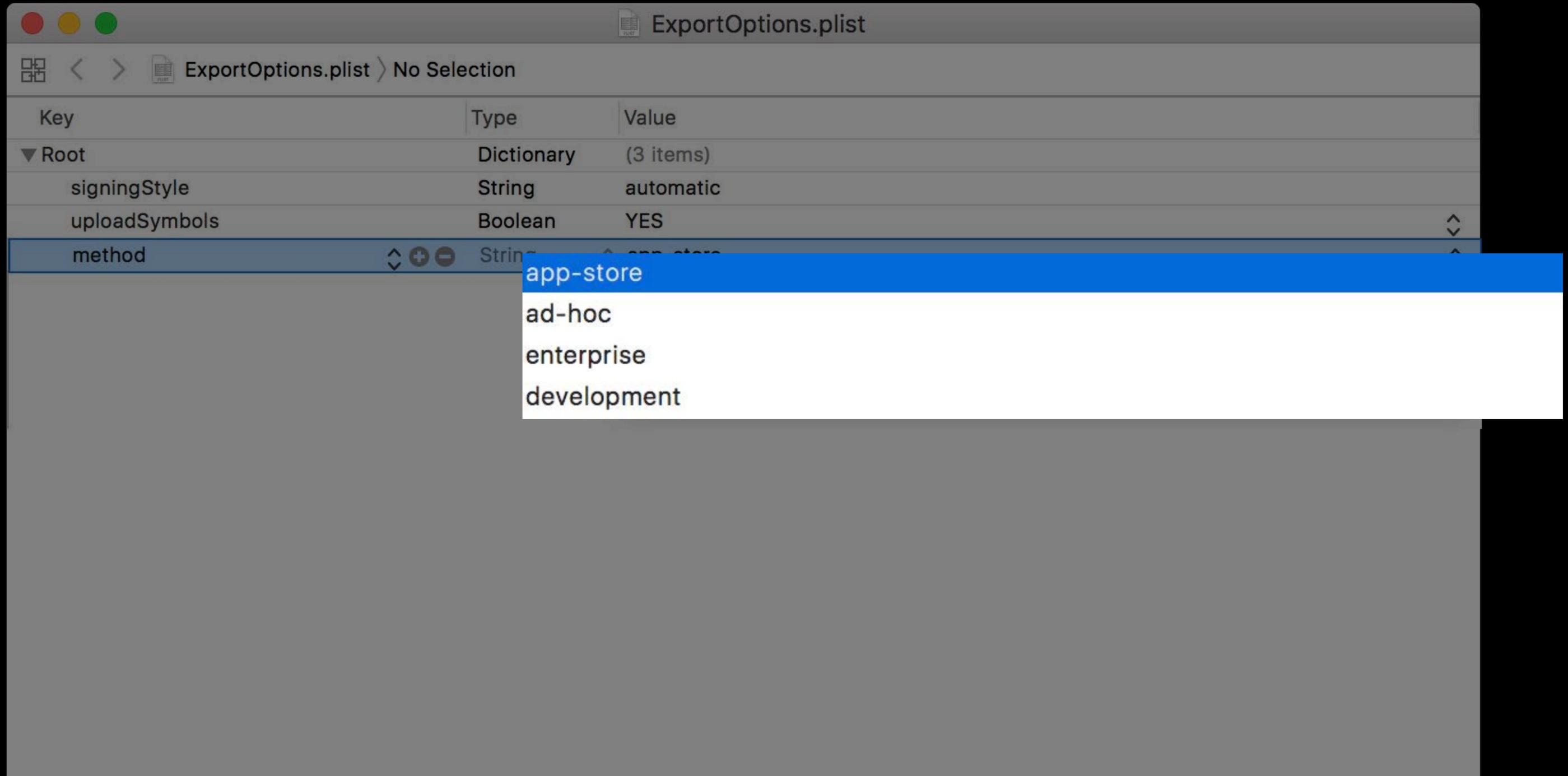
Xcode Server

Distribution signing methods

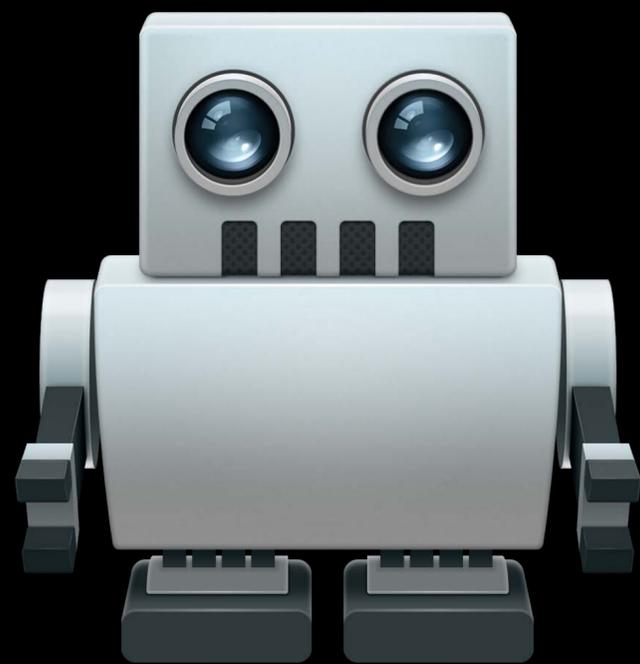


Xcode Server

Distribution signing methods



Demo



Review

Review

Development signing with Xcode Server

Review

Development signing with Xcode Server

Manual signing improvements

Review

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Manual signing improvements

Distributing your app

Review

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Manual signing improvements

Distributing your app

Distribution signing with Xcode Server

More Information

<https://developer.apple.com/wwdc17/403>

Related Sessions

What's New in iTunes Connect	Hall 3	Wednesday 5:10PM
What's New in Device Configuration, Deployment, and Management	Grand Ballroom A	Thursday 1:50PM
What's New in Testing	Hall 2	Thursday 3:10PM
What's New in Xcode App Signing		WWDC 2016
Advanced Testing and Continuous Integration		WWDC 2016
Continuous Integration with Xcode 6		WWDC 2014

Labs

Building, Signing, and Distributing Your App with Xcode Lab	Technology Lab K	Tue 4:10PM–6:00PM
Building, Signing, and Distributing Your App with Xcode Lab	Technology Lab K	Wed 12:00PM–3:00PM
Source Control, Simulator, Testing, and Continuous Integration with Xcode Lab	Technology Lab E	Wed 4:10PM–6:00PM
Source Control, Simulator, Testing, and Continuous Integration with Xcode Lab	Technology Lab K	Thu 4:10PM–6:00PM

