

How to Provision for iOS from Windows 10

8/19/2019 – Part 1

8/24/2018 – Part 2

8/27/2018 – Part 3





Movies & TV



Tips



Podcasts



Photo Booth



Find Friends



Find iPhone



Apple Store



Clips



GarageBand



Keynote



Numbers



Pages



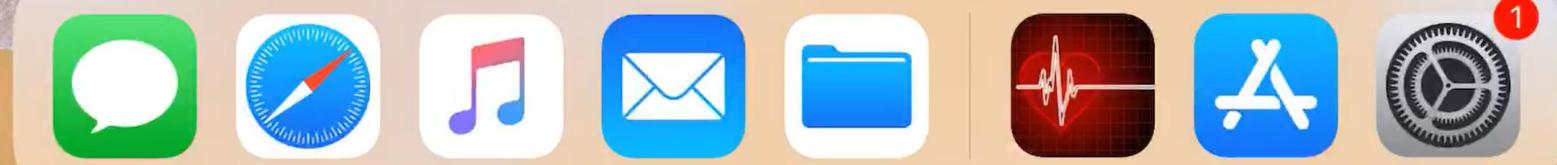
iMovie



iTunes U



IPadTest



Provisioning Steps

1. Get Apple ID

2. Request/Create iOS
Certificate

3. Create / Register an App
Identifier for the Application

4. Register the device UDID

5. Create/Register
Provisioning Profile

6. Configure an
iTunesMetadata.plist File
and iTunes and App Icons

7. Configure IPA and Build

8. Deploy to iTunes

2. Request iOS Certificate Created On the Mac

On Dev Site is Option
“Certificates”

Note: These are distribution keys because of “Ad Hoc” option

Keychain Access

CertificateSigningRequest.sig
ningrequest

iPadDevKey (public)
iPadDevKey (private)

Upload to
Dev Site

Download to
Mac

Create Sign
Request

Get public
and private
keys

ios_distribution.cer

Thelma Looms ios
Distribution (Dev Site)

iPhone Distribution : Thelma
Looms (Apple ID) -

Double click
on Mac
to produce

Runs in Xcode

1. Get Apple ID

2. Request/Create iOS
Certificate

3. Create/Register an App
Identifier for the Application
Identifier (add with +)

App ID Descrip
(name of program)

App ID Prefix
(already populated = Apple
Developer ID)

App ID Suffix
com.thelmalooms.*
Or
com.thelmalooms.application
name

This is the Bundle ID = used in
Visual Studio Manifest

App Services
Non selected
(called Entitlements)



Keys

 All

Identifiers

 App IDs Pass Type IDs Website Push IDs iCloud Containers App Groups Merchant IDs Music IDs Maps IDs

Devices

 All Apple TV Apple Watch iPad iPhone iPod Touch

Provisioning Profiles

 All Development Distribution

To complete the registration of this App ID, make sure your App ID information is correct, and click the submit button.

App ID Description: **ipadDevDemo**

Identifier: [REDACTED] .com.thelmalooms.*

Access WiFi Information: Disabled

App Groups: Disabled

Apple Pay Payment Processing: Disabled

Associated Domains: Disabled

AutoFill Credential Provider: Disabled

ClassKit: Disabled

Data Protection: Disabled

Game Center: Disabled

HealthKit: Disabled

HomeKit: Disabled

Hotspot: Disabled

iCloud: Disabled

In-App Purchase: Disabled

Inter-App Audio: Disabled

1. Get Apple ID

6662395ZCV

2. Request/Create iOS
Certificate

3. Create an App Identifier for
the Application

4. Register the device UDID

Get UDID from iTunes

1. Get Apple ID

2. Request/Create iOS
Certificate

3. Create an App Identifier for
the Application

4. Register the device UDID

5. Finally Create Provision Profile

5. Finally Create Provision Profile

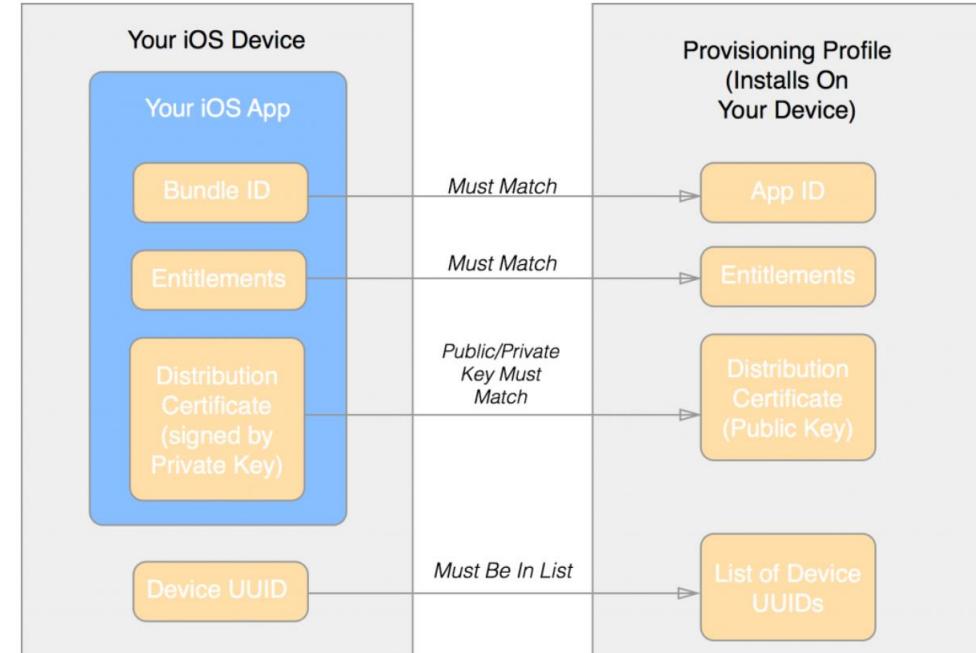
Select what type of provisioning
(Ad hoc)

Select App ID

Select Certificate

Select device

Name profile



Tying It All Together

Download and Double Click

Runs in Xcode on the Mac

**Developer**

Discover

Design

Develop

Distribute

Support

Account



Certificates, Identifiers & Profiles

Thelma Looms ▾

iOS, tvOS, watchOS**Certificates**

- All
- Pending
- Development
- Production

Keys

- All

Identifiers

- App IDs
- Pass Type IDs
- Website Push IDs
- iCloud Containers
- App Groups
- Merchant IDs
- Music IDs
- Maps IDs

Add iOS Provisioning Profiles (Distribution)

**Select Type** → **Configure** → **Generate** → **Download****Your provisioning profile is ready.****Download and Install**

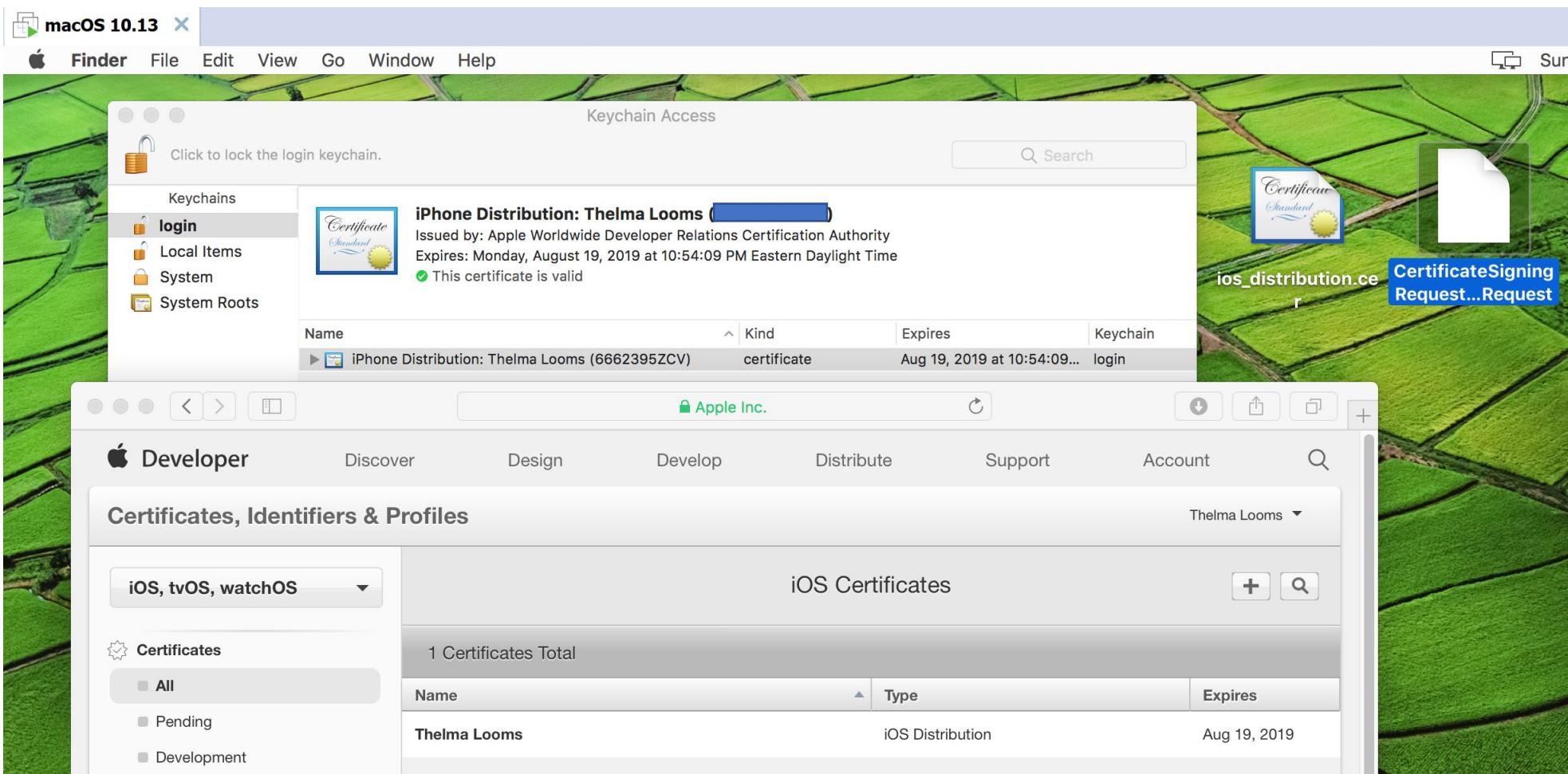
Download and double click the following file to install your Provisioning Profile.



Name: iPadDevDemo
Type: iOS Distribution
App ID: [REDACTED] com.thelmalooms.*
Expires: Aug 19, 2019

Download

iOS Certificate



App ID

Developer Discover Design Develop Distribute Support Account 

Certificates, Identifiers & Profiles Thelma Looms ▾

iOS, tvOS, watchOS 

iOS App IDs

1 App IDs total.

Name	ID
ipadDevDemo	com.thelmalooms.*

 Certificates

- All
- Pending
- Development
- Production

Device

The screenshot shows the Apple Developer portal interface. The top navigation bar includes links for Discover, Design, Develop, Distribute, Support, and Account, along with a search bar and user information for 'Apple Inc.' and 'Thelma Looms'. The main content area is titled 'Certificates, Identifiers & Profiles' and is set to 'iOS, tvOS, watchOS'. On the left, there are three sidebar sections: 'Certificates' (with options for All, Pending, Development, Production), 'Keys' (All), and 'Identifiers' (App IDs, Pass Type IDs, Website Push IDs, iCloud Containers, App Groups, Merchant IDs, Music IDs, Maps IDs). The right side displays a table titled 'All Devices' with columns 'Name' and 'Identifier'. A single row is visible, showing 'Cookie iPad' in the Name column and a redacted Identifier value.

Name	Identifier
Cookie iPad	[REDACTED]

Provision Profile

Developer Discover Design Develop Distribute Support Account 

Certificates, Identifiers & Profiles

Thelma Looms ▾

iOS, tvOS, watchOS ▾

iOS Provisioning Profiles (Distribution)

Name	Type	Status
iPadDevDemo	iOS Distribution	Active

1 profiles total.

Certificates

- All
- Pending
- Development
- Production

Keys

- All

Identifiers

- [App IDs](#)
- Pass Type IDs
- Website Push IDs
- iCloud Containers
- App Groups
- Merchant IDs

 Name: iPadDevDemo
Type: iOS Distribution
App ID: ipadDevDemo (com.thelmalooms.*)
Certificates: 1 total
Devices: 1 total
Enabled Services: None
Status: Active
Expires: Aug 20, 2019

[Delete](#) [Edit](#) [Download](#)

Use fastlane to configure from the shell

Executed on the PC

SET LC_ALL=en_US.UTF-8

SET LANG=en.US.UTF-8

>fastlane init

>bundle exec fastlane cert

security unlock-keychain login.keychain (executed on the Mac)

<https://docs.microsoft.com/en-us/xamarin/ios/deploy-test/provisioning/fastlane/cert>

<https://docs.microsoft.com/en-us/xamarin/ios/get-started/installation/device-provisioning/manual-provisioning?tabs=vswin#download>



Prepare for iTunes
Deployment

1. Get Apple ID

2. Request/Create iOS
Certificate

3. Create / Register an App
Identifier for the Application

4. Register the device UDID

5. Create/Register
Provisioning Profile

6. Configure an
iTunesMetadata.plist File
and iTunes and App Icons

7. Configure IPA and Build

8. Deploy to iTunes

6. Configure an iTunesMetadata.plist File and iTunes and App Icons

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN"
"http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
    <key>UIRequiredDeviceCapabilities</key>
    <dict>
        <key>armv7</key>
        <true/>
        <key>front-facing-camera</key>
        <true/>
    </dict>
    .....
    .....
    .....
</dict>
</plist>
```

<https://docs.microsoft.com/en-us/xamarin/ios/deploy-test/app-distribution/itunesmetadata?tabs=vswin#iTunesMetadataCreating>

<https://docs.microsoft.com/en-us/xamarin/ios/deploy-test/app-distribution/ipa-support?tabs=vswin>
<https://docs.microsoft.com/en-us/xamarin/ios/app-fundamentals/images-icons/app-icons?tabs=vsmac>

Uses bundle ID from Provision Profile

IPadTest - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug iPhone Device

Info.plist iPadTest Main.storyboard*

Server Explorer

Application Visual Assets Capabilities Advanced

Application Name: ipadDevDemo

Bundle Identifier: com.thelmalooms.ipadDevDemo

Version: 1.0

Build: 1.0

Deployment Target: 11.4

Main Interface: Main

Devices: iPad

Device Orientation:

Portrait Landscape Left Upside Down Landscape Right

Status Bar Style: Default

Hide status bar Requires full screen

The screenshot shows the Microsoft Visual Studio interface for an iPad application named 'IPadTest'. The 'Application' tab is active in the settings dialog. The 'Bundle Identifier' field is highlighted with a blue border, containing the value 'com.thelmalooms.ipadDevDemo'. Other fields include 'Application Name: ipadDevDemo', 'Version: 1.0', 'Build: 1.0', 'Deployment Target: 11.4', 'Main Interface: Main', and 'Devices: iPad'. Under 'Device Orientation', 'Portrait' and 'Landscape Left' are checked with checked checkboxes, while 'Upside Down' and 'Landscape Right' are unchecked. The 'Status Bar Style' is set to 'Default'. The Visual Studio toolbar at the top includes icons for back, forward, search, and device selection, along with dropdown menus for File, Edit, View, Project, Build, Debug, Team, Tools, Test, Analyze, Window, and Help.

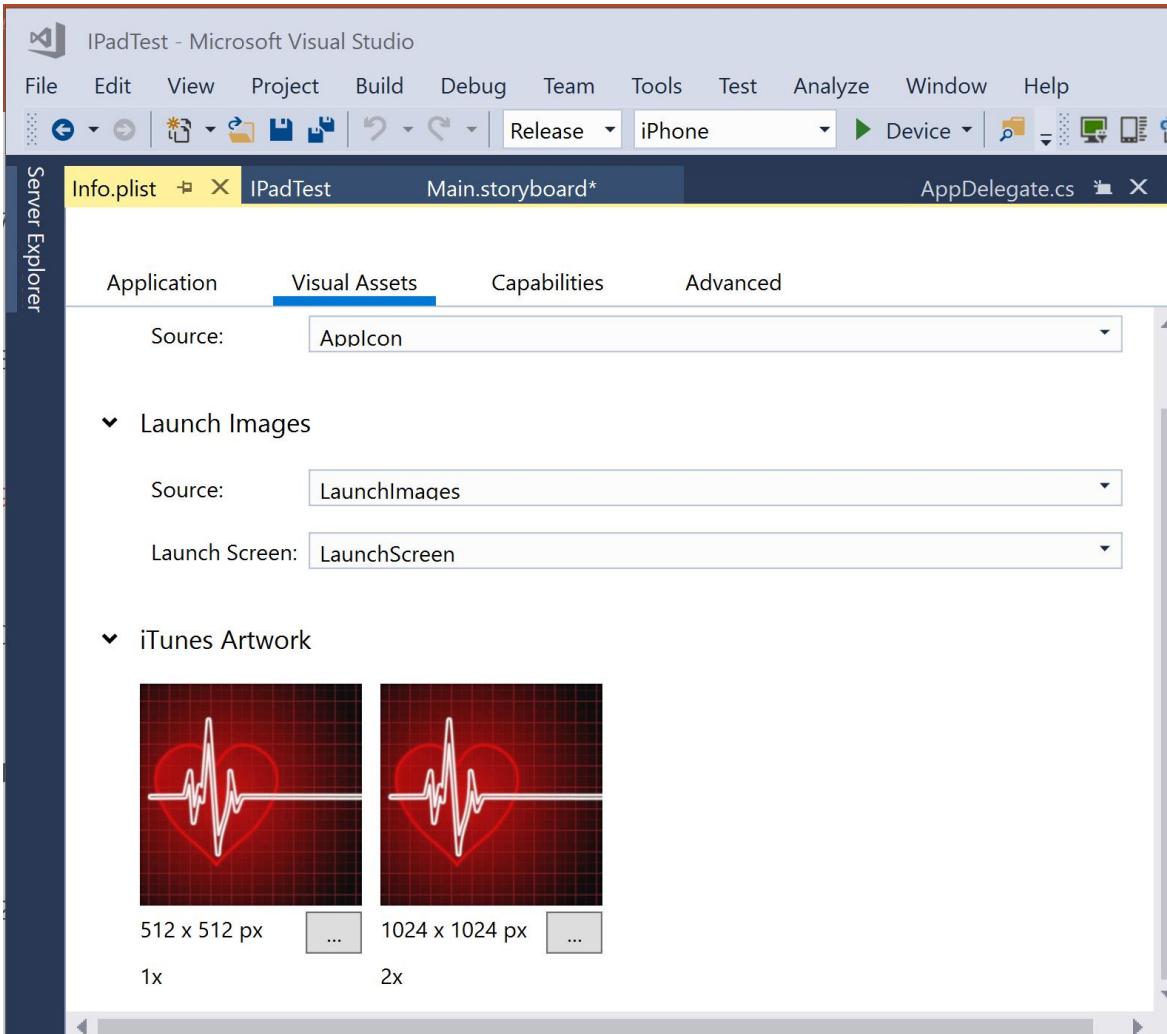


Property	Type	Value
Required device capabilities	Dictionary	(2 items)
armv7	Boolean	Yes
front-facing-camera	Boolean	Yes
+ [Add]		
drmVersionNumber	Number	0
fileExtension	String	.app
gameCenterEnabled	Boolean	No
gameCenterEverEnabled	Boolean	No
kind	String	software
s	Number	143441
softwareIconNeedsShine	Boolean	No
softwareSupportedDeviceIds	Array	(1 item)
+ [Add]		
Number	4	
+ [Add]		
subgenres	Array	(2 items)
+ [Add]		
Dictionary	(2 items)	
genre	String	Medical
genrelid	Number	6020

6a. Create Image for iTunes

iTunes Artwork

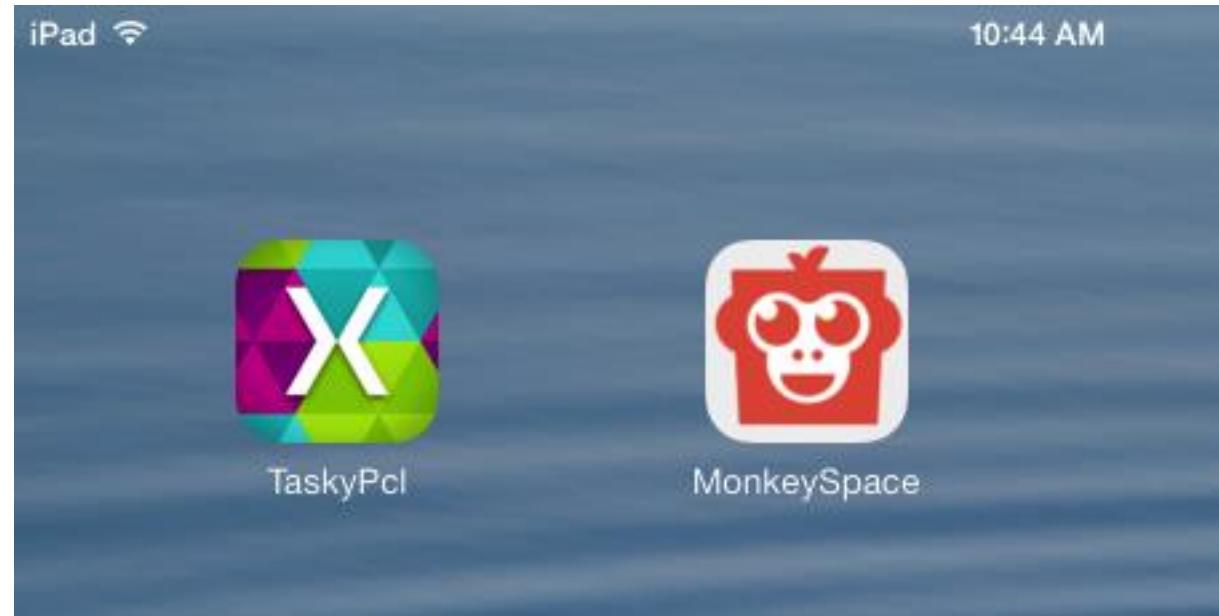
When delivering your app through **non-App Store** means, you also need to include a **512x512** and a **1024x1024** image that will be used to represent **your application in iTunes**.



6b. Create Image for iOS

iOS Icons

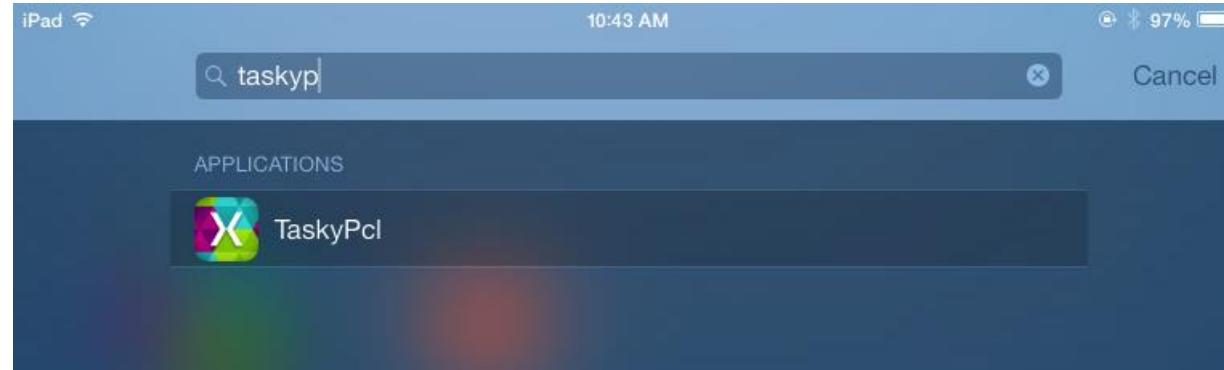
Application Icon - Every iOS app must define an application icon. This is the icon that the user will tap from the iOS home screen to launch the app. Additionally, this icon is used by Game Center, if applicable. Example:



6b. Create Image for iOS

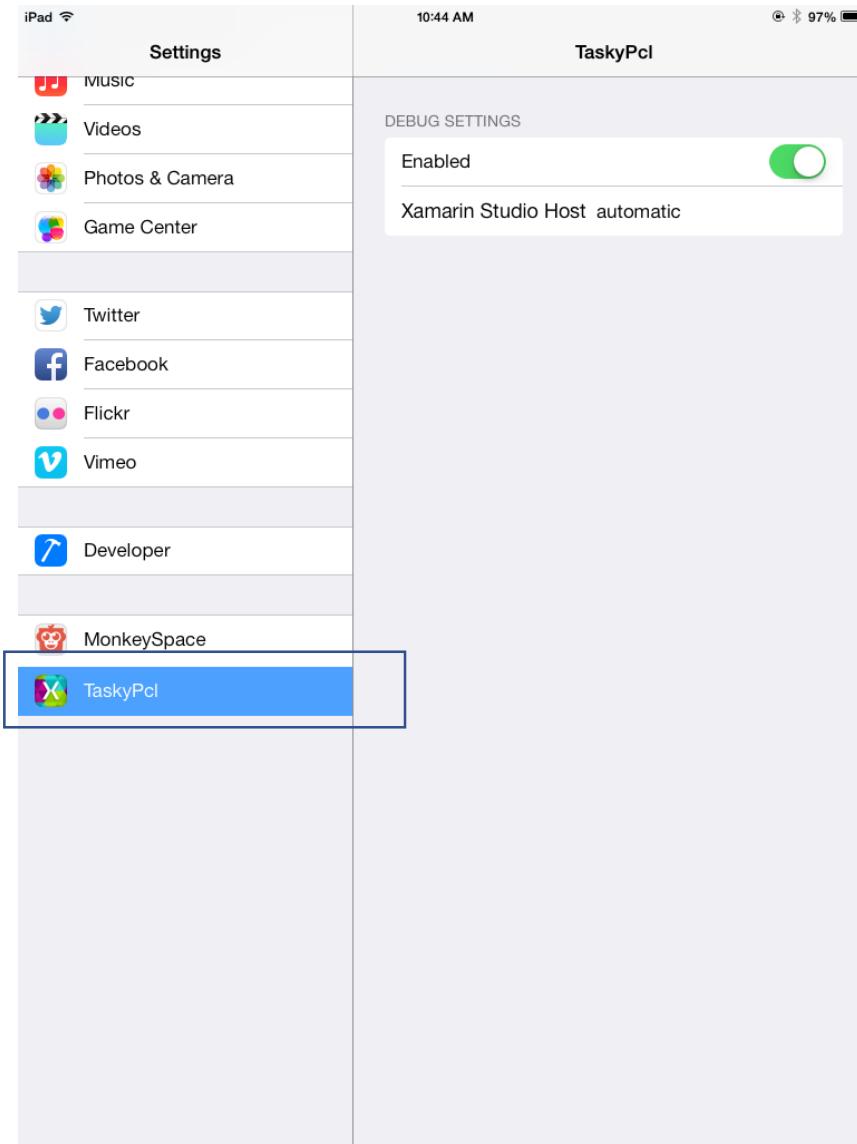
iOS Icons

Spotlight Icon - Whenever the user enters the name of an app in a Spotlight Search, this icon is displayed. Example:



6b. Create Image for iOS

Settings Icon - If the user enters the **Settings** app on their iOS device, this icon will be displayed at the end of the **Settings** list for the app. Example:



6c. Create icons for iPhone

iPhone: iOS 9 & 10 (iPhone 6 & 7 Plus)

	3x
Application Icon	180x180
Spotlight	120x120
Settings	87x87

NOTE: All assets MUST BE .PNG Files

6c. Create icons for iPhone

iPhone: iOS 7 & 8

	1x	2x
Application Icon	60x60 ¹	120x120
Spotlight	40x40 ²	80x80
Settings	-	-

NOTE: All assets MUST BE .PNG Files

6c. Create icons for iPhone

iPhone: iOS 5 & 6

1x	2x	
Application Icon	57x57	114x114
Spotlight	29x29	58x58
Settings	29x29 ^{3, 4}	58x58 ^{3, 4}

NOTE: All assets MUST BE .PNG Files

6d. Create icons for the iPad

iPad: iOS 9 & 10

2x (iPad Pro)	
Application Icon	167x167 ⁶
Spotlight	120x120 ⁶
Settings	58x58 ⁵

NOTE: All assets MUST BE .PNG Files

6d. Create icons for the iPad

iPad: iOS 7 & 8

1x	2x	
Application Icon	76x76	152x152
Spotlight	40x40	80x80
Settings	-	-

NOTE: All assets MUST BE .PNG Files

6d. Create icons for the iPad

iPad: iOS 5 & 6

	1x	2x
Application Icon	72x72	144x144
Spotlight	50x50	100x100
Settings	29x29 ^{3, 5}	58x58 ^{3, 5}

NOTE: All assets MUST BE .PNG Files



IPadTest - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug iPhone Device

Info.plist IPadTest iTunesMetadata.plist Main.storyboard* AppDelegate.cs

Server Explorer

Application Visual Assets Capabilities Advanced

App Icons

Source: Applcon

Launch Images

There is no Asset Catalog configured. Please add a new Asset Catalog, to include an ImageSet, by pressing the Use Asset Catalog button:

Use Asset Catalog

Launch Screen: LaunchScreen

iTunes Artwork

This screenshot shows the Microsoft Visual Studio interface for an iPad project named "IPadTest". The "Visual Assets" tab is selected in the main content area. Under "App Icons", the source is set to "Applcon". A note indicates that no Asset Catalog is configured, and a "Use Asset Catalog" button is available. The "Launch Images" section shows a placeholder message and a dropdown for the launch screen, currently set to "LaunchScreen". The "iTunes Artwork" section is also visible.

NOTE: All assets MUST BE .PNG Files



IPadTest - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Release iPhone Device

Info.plist IPadTest Main.storyboard* AppDelegate.cs

Server Explorer

Application Visual Assets Capabilities Advanced

Source: AppIcon

Launch Images

Source: LaunchImages

Launch Screen: LaunchScreen

iTunes Artwork

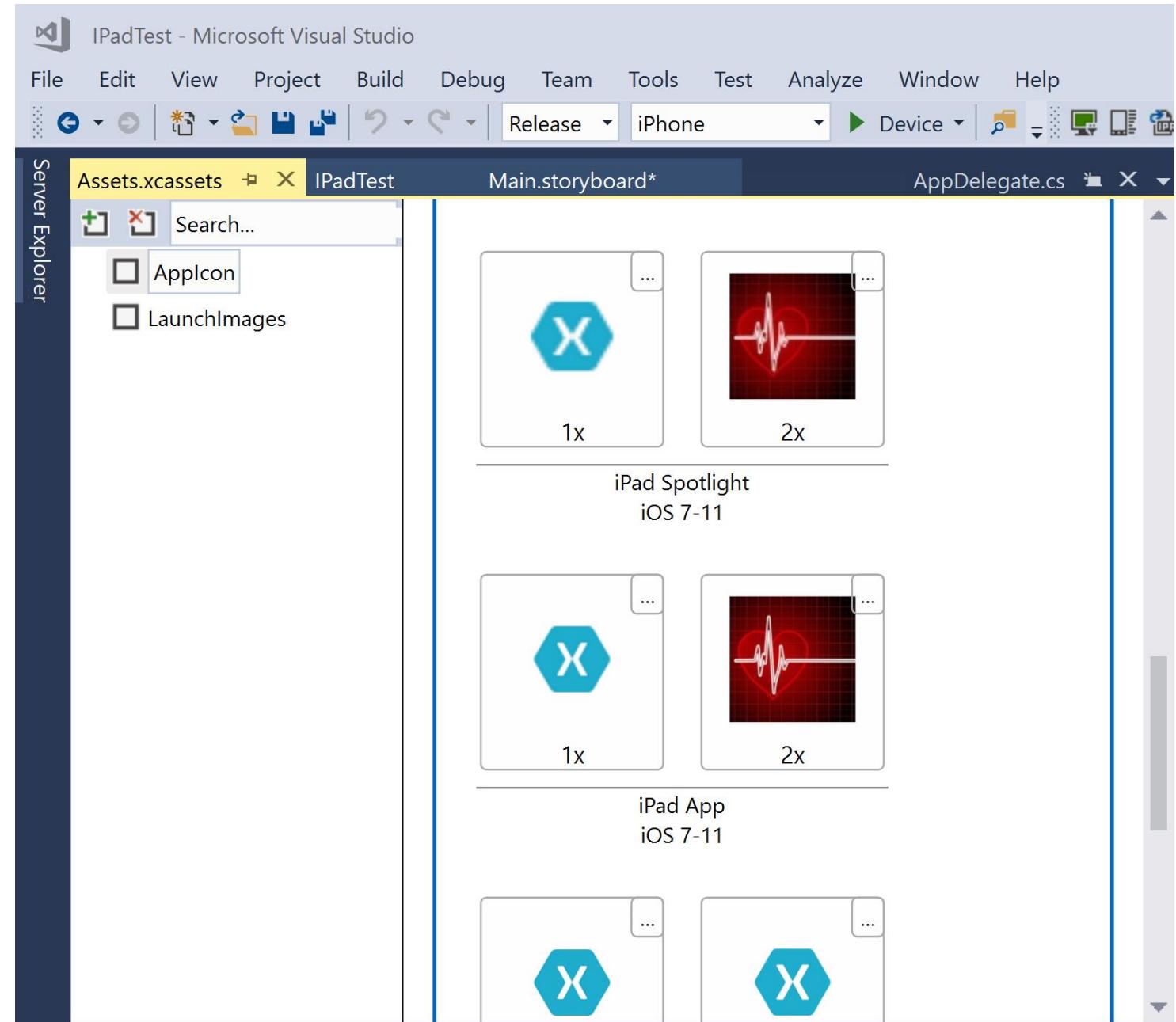
512 x 512 px ... 1x

1024 x 1024 px ... 2x

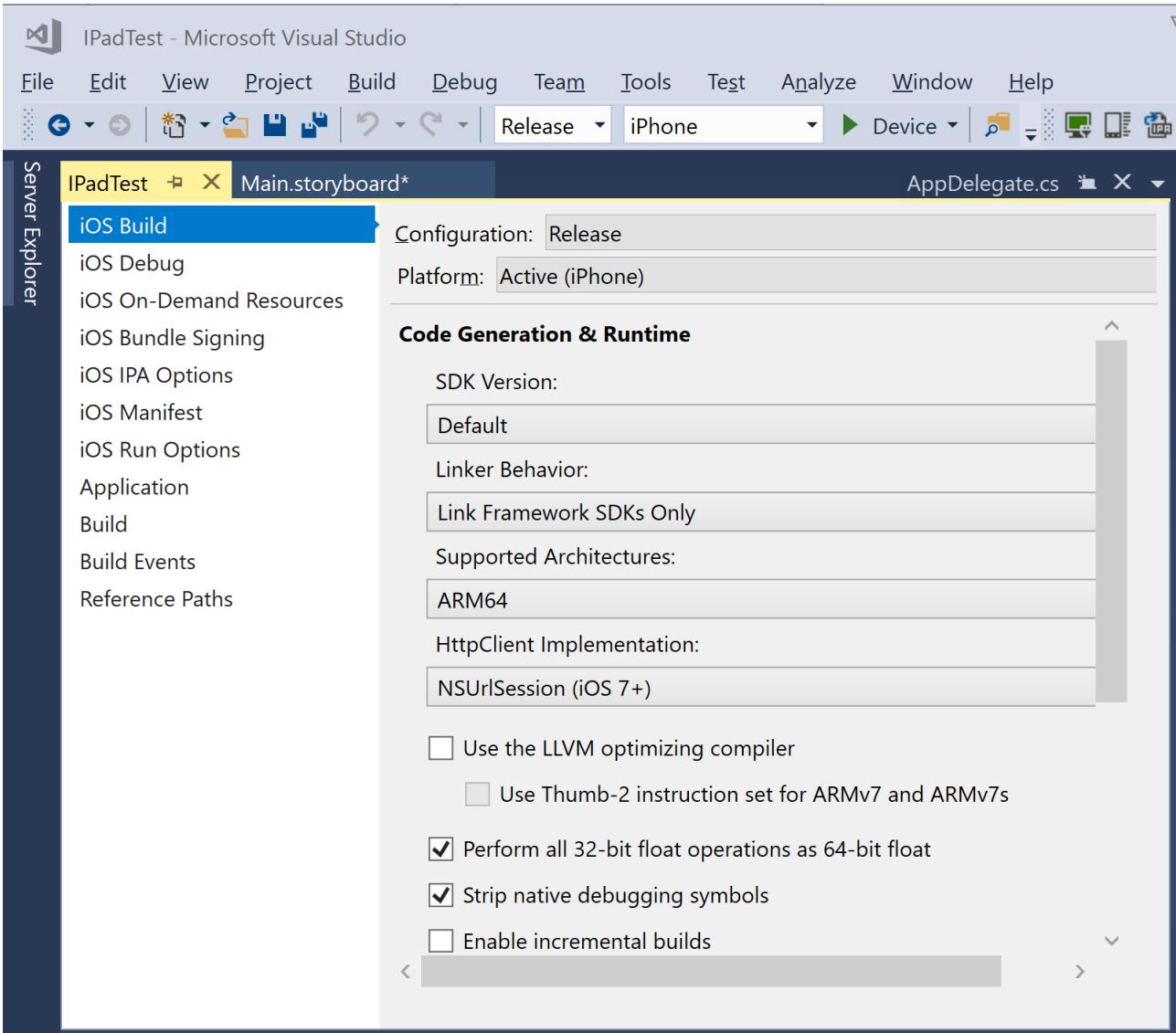
This screenshot shows the "Visual Assets" tab in the Microsoft Visual Studio Asset Catalog editor for an iPad project named "IPadTest". The catalog includes an application icon (AppIcon) and launch images (LaunchImages). It also contains iTunes artwork consisting of two heart/EKG graphic files: one at 512x512 pixels and another at 1024x1024 pixels, both labeled as 1x and 2x respectively. The "Visual Assets" tab is highlighted in blue, and the "Source" dropdowns show the specific file paths used for each asset type.

NOTE: All assets MUST BE .PNG Files

Application Icons

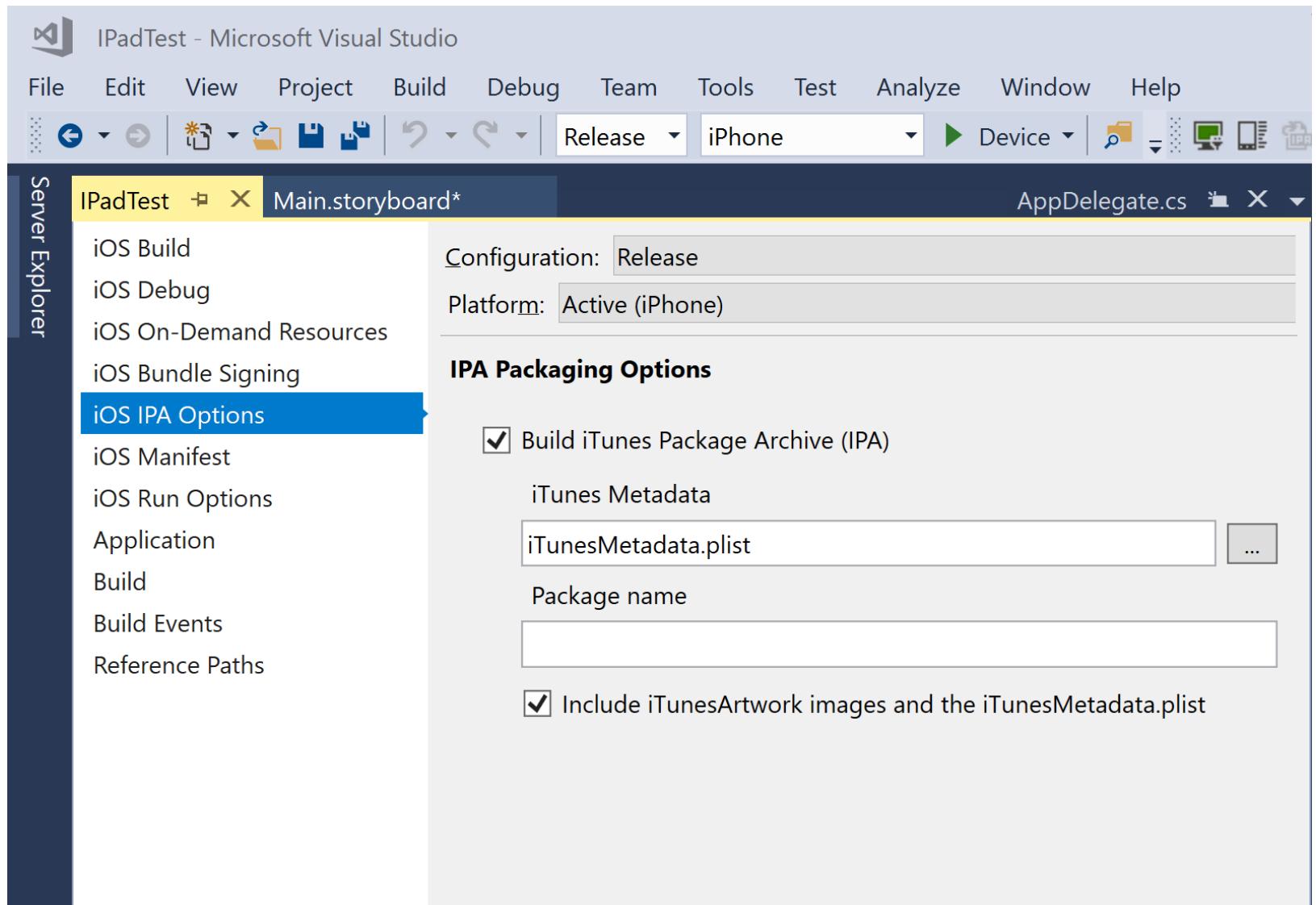


IOS Build Options

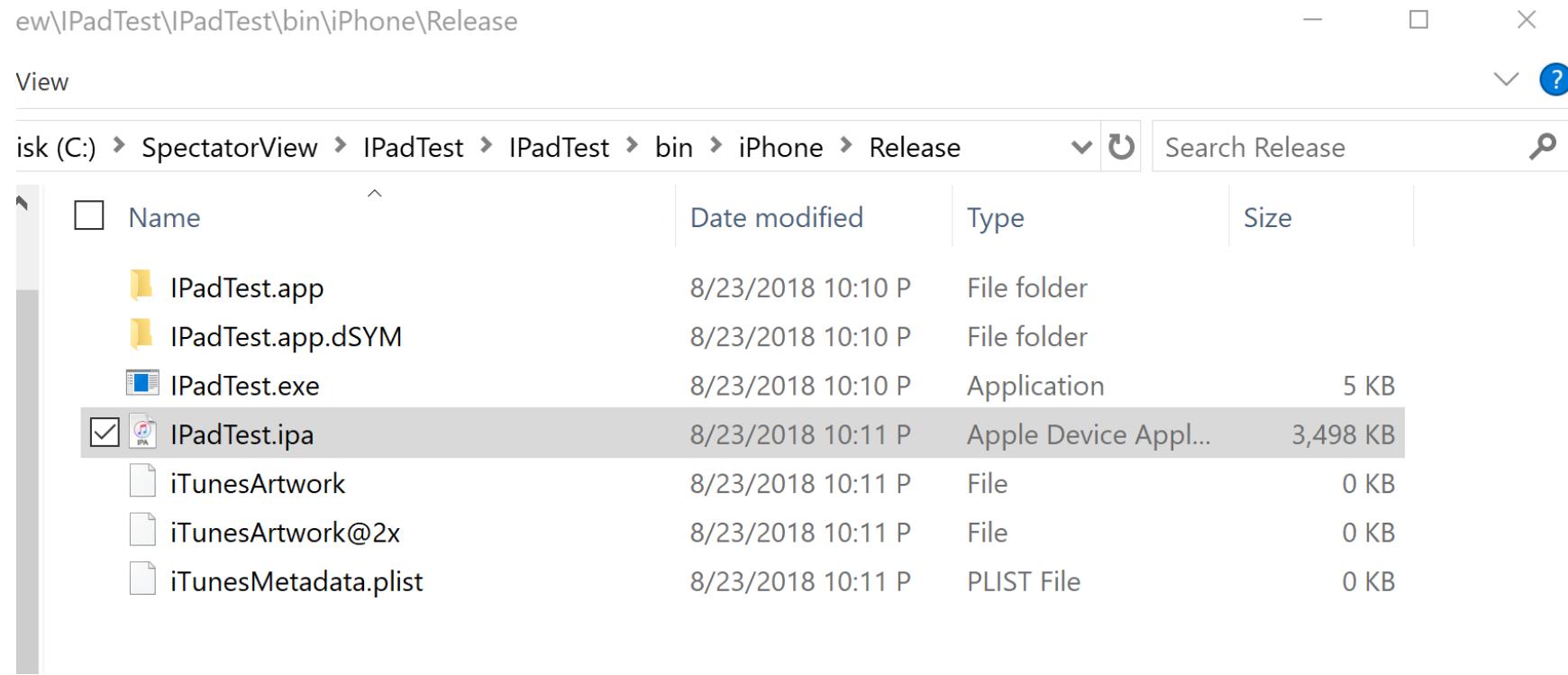


7. Configure IPA options

The .ipa file stores an iOS application.
Similar to an .apk file for Andriod Studio.



IPA File on Windows

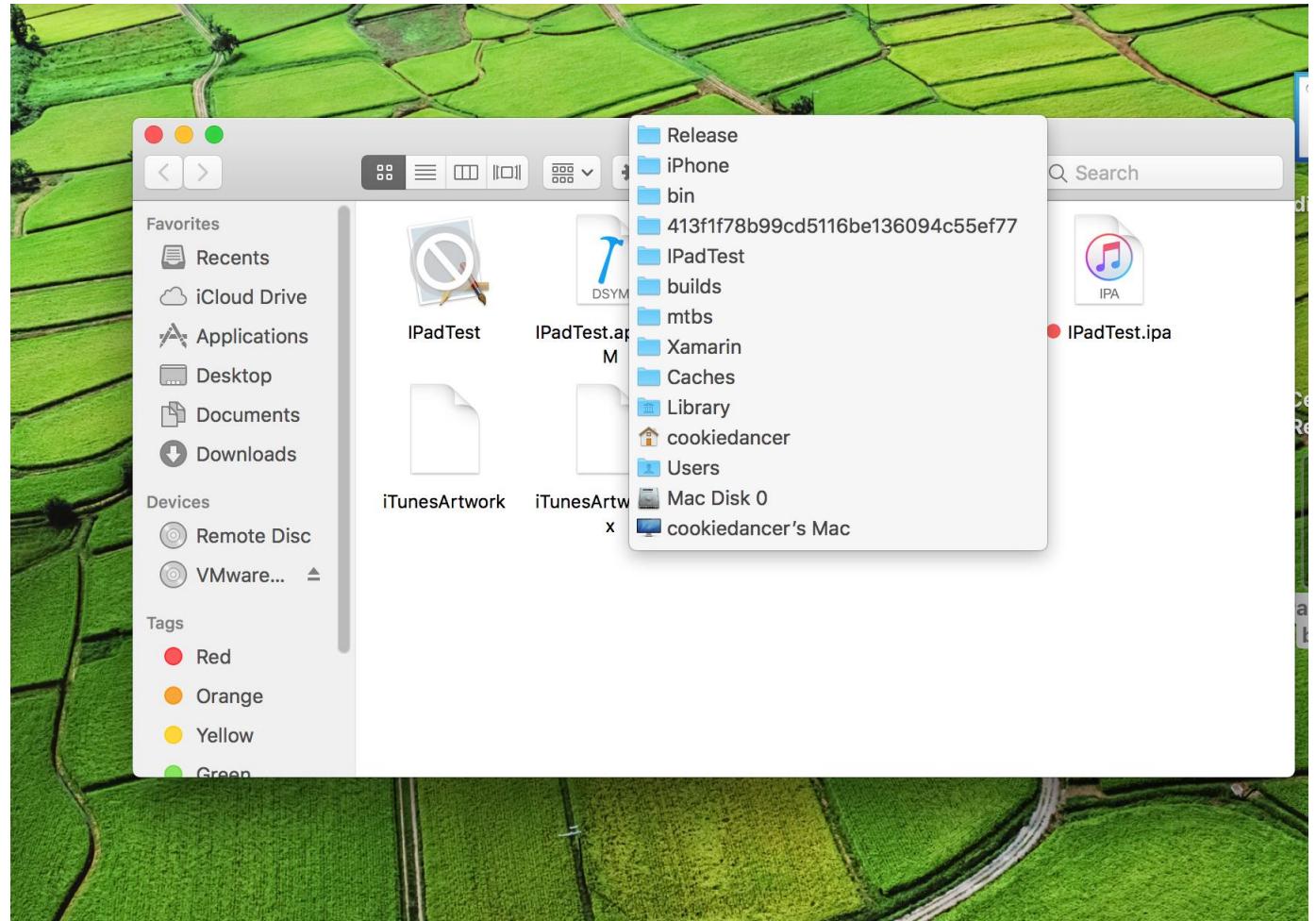


A screenshot of a Windows file explorer window titled "ew\IPadTest\IPadTest\bin\iPhone\Release". The window shows a list of files and folders:

Name	Date modified	Type	Size
IPadTest.app	8/23/2018 10:10 P	File folder	
IPadTest.app.dSYM	8/23/2018 10:10 P	File folder	
IPadTest.exe	8/23/2018 10:10 P	Application	5 KB
<input checked="" type="checkbox"/> IPadTest.ipa	8/23/2018 10:11 P	Apple Device Appl...	3,498 KB
iTunesArtwork	8/23/2018 10:11 P	File	0 KB
iTunesArtwork@2x	8/23/2018 10:11 P	File	0 KB
iTunesMetadata.plist	8/23/2018 10:11 P	PLIST File	0 KB

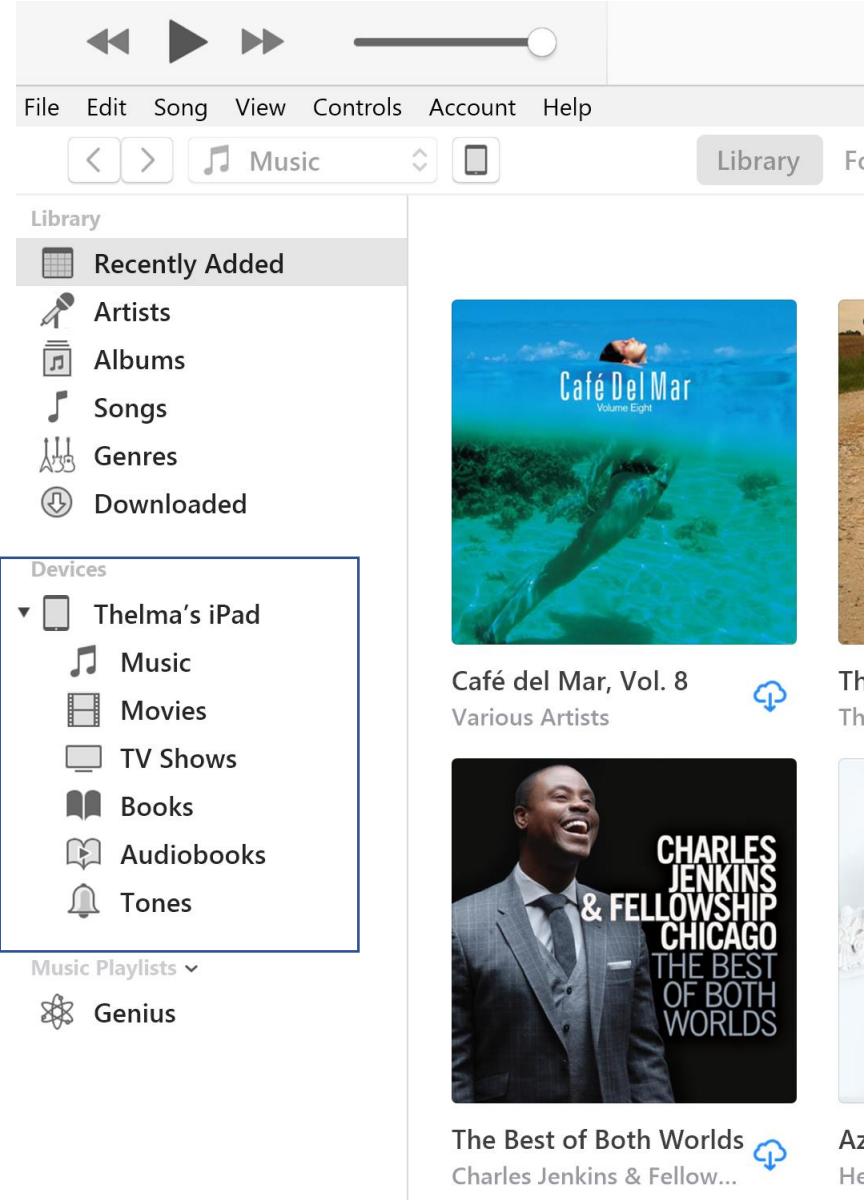
Show IPA File on Build Server command.

IPA File on Mac



8. Load into iTunes

Load onto iTunes – it loads onto device





Movies & TV



Tips



Podcasts



Photo Booth



Find Friends



Find iPhone



Apple Store



Clips



GarageBand



Keynote



Numbers



Pages



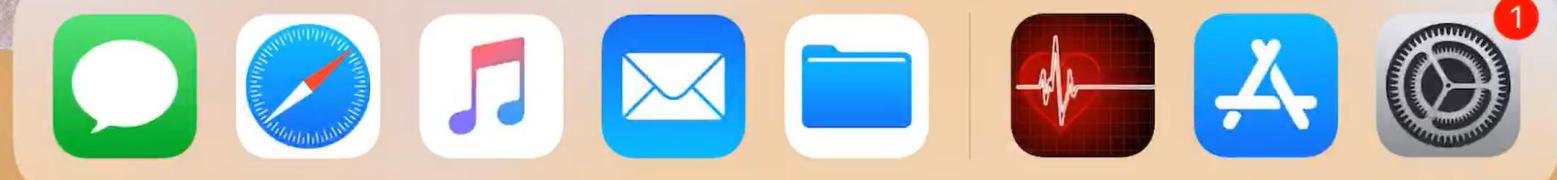
iMovie



iTunes U



iPadTest





Mac environment for creating
certificates, public and private
keys and provisioning profile



macOS 10.13 



macOS 10.13

 Power on this virtual machine

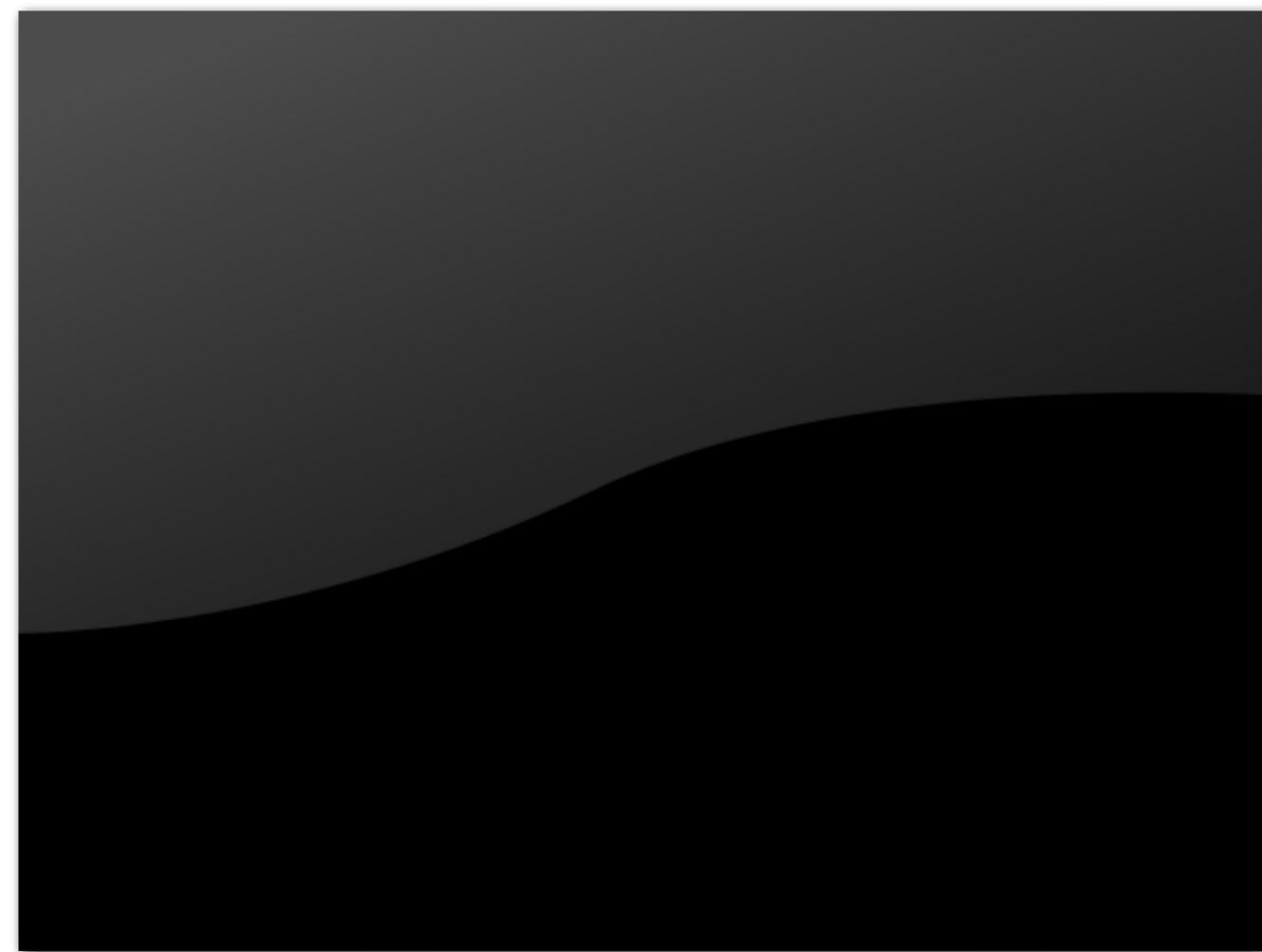
 Edit virtual machine settings

▼ Devices

	Memory	4 GB
	Processors	2
	Hard Disk (SATA)	40 GB (Preallocat...
	CD/DVD (SATA)	Using file C:\Pro...
	Network Adapter	Bridged (Autom...
	USB Controller	Present
	Sound Card	Auto detect
	Display	Auto detect

▼ Description

Type here to enter a description of this virtual machine.





Welcome to macOS High Sierra
Take a quick tour to see what's new.

Show

Later

.VolumeIcon.icns



cookiedancer



ios_distribution.ce
r



PLAYGROUND
MyPlayground.playground

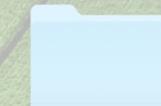


Get the latest VMware Tools
Request...Request

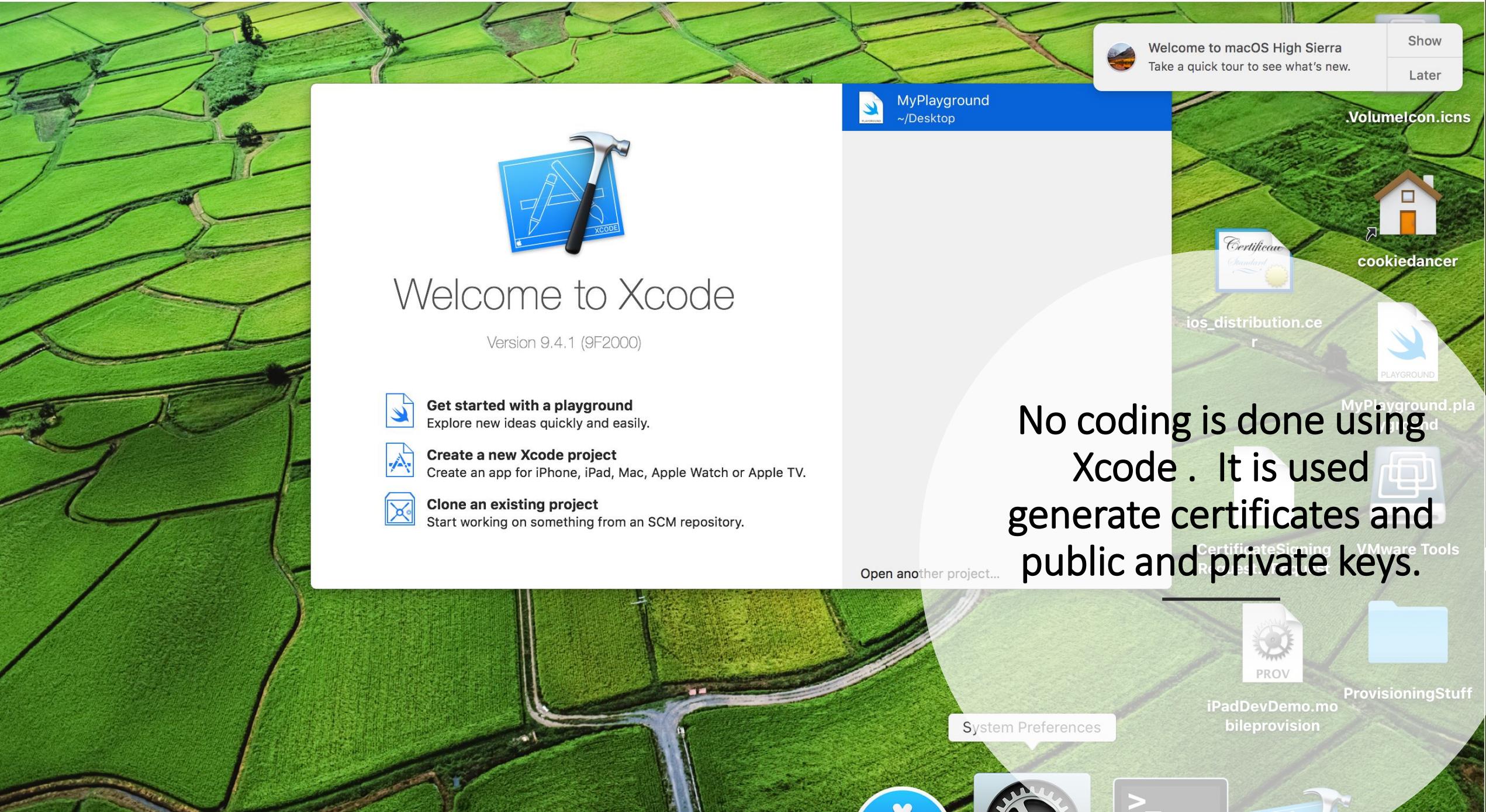
MacOS running on VMWare!



iPadDevDemo.mo
bileprovision



ProvisioningStuff





Keychain Access

File Edit View Window Help



Click to lock the login keychain.

Keychain Access

Search

Keychains

- login**
- Local Items
- System
- System Roots

**iPadDevKey**

Kind: public key, RSA, 2,048-bit

Usage: Any

Name	Kind	Date Modified	Expires	Keychain
<key>	public key	--	--	login
<key>	private key	--	--	login
iMessage Encryption Key	public key	--	--	login
iMessage Encryption Key	private key	--	--	login
iMessage Signing Key	public key	--	--	login
iMessage Signing Key	private key	--	--	login
iOS Develop...s (Thelma Looms)	private key	--	--	login
iOS Distribution: Thelma Looms	private key	--	--	login
iPadDevKey	public key	--	--	login
iPadDevKey	private key	--	--	login

Public and Private Keys



Certificate Assistant

File Edit Window



Click to lock the login keychain.

Keychains

- login
- Local Items
- System
- System Roots

Category

- All Items
- Passwords
- Secure Notes
- My Certificate
- Keys
- Certificates

Orange

Keychain Access

Certificate Assistant

Certificate Information

Enter information for the certificate you are requesting. Click Continue to request a certificate from the CA.

User Email Address: tlooms@gmail.com

Common Name: **iPadDevKey**

CA Email Address:

Request is:

- Emailed to the CA
- Saved to disk
- Let me specify key pair information

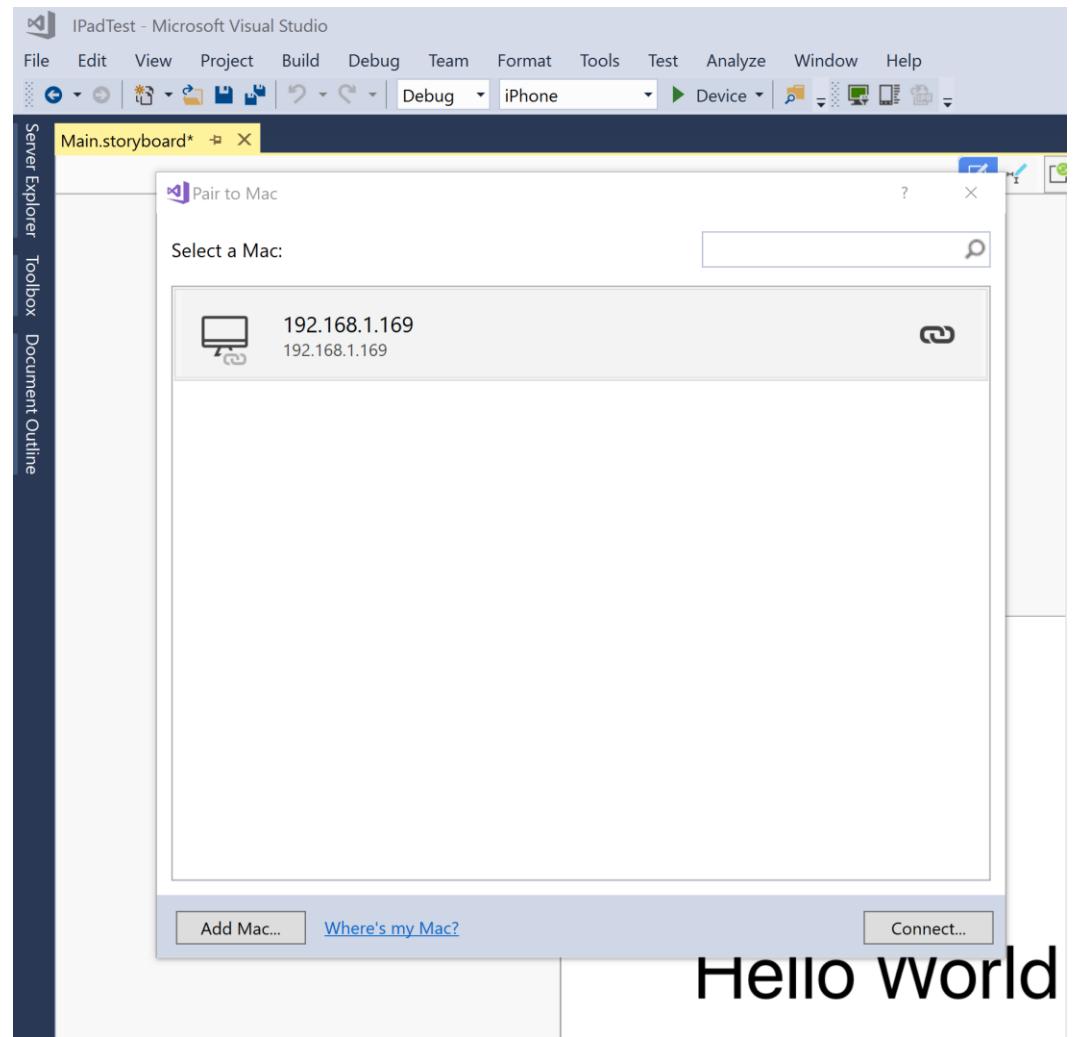
Continue

-----BEGIN CERTIFICATE REQUEST-----

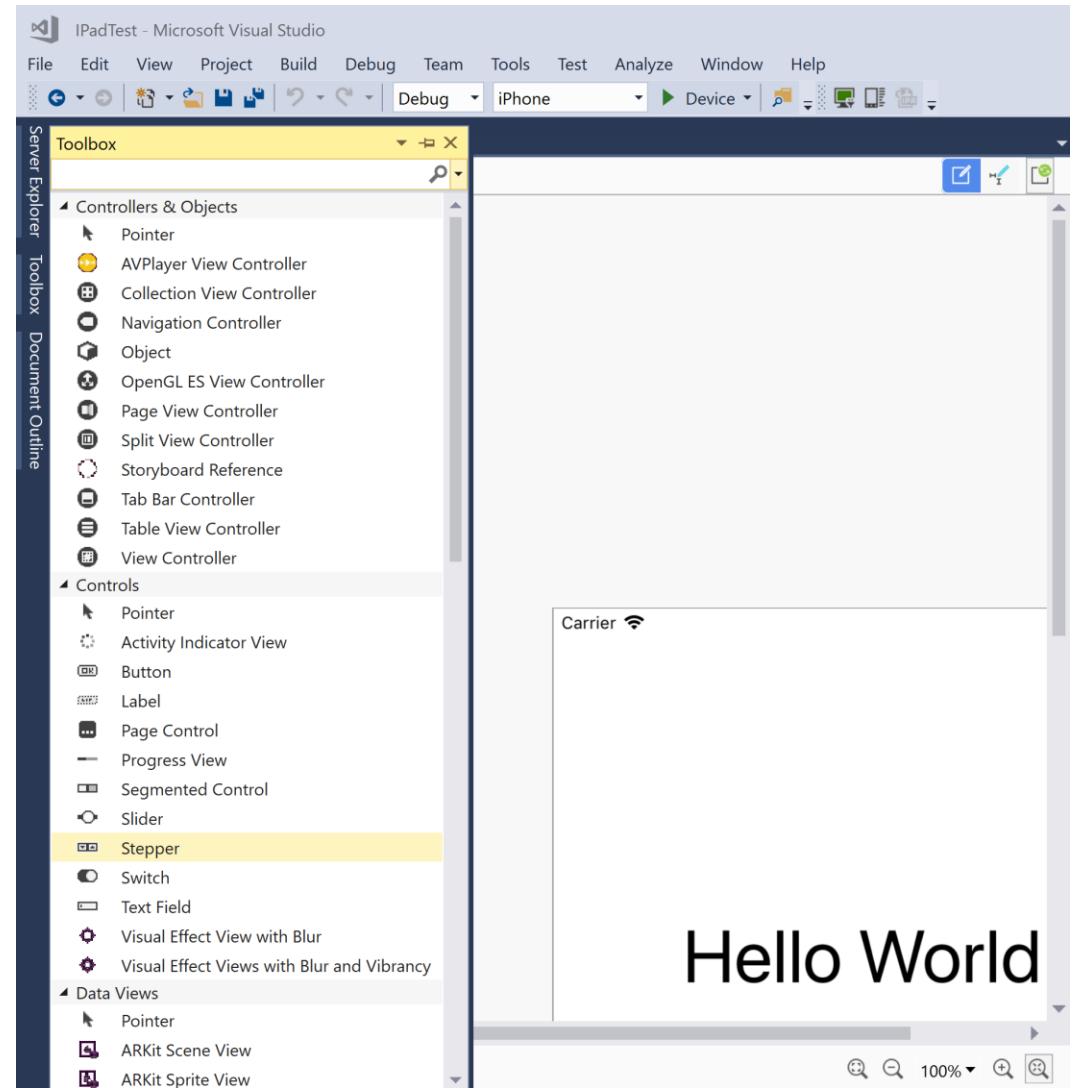
MIIICkDCCAXgCAQAwSzEfMB0GCSqGSIB3DQEJARYQdGxvb21zQ
GdtYWlsLmNvbTEbMBkGA1UEAwSY29va2IIZGFuY2VyZGV2a2
V5MQswCQYDVQQGEwJVUzCCASIwDQYJKoZIhvcNAQEBBQADg
gEPADCCAQoCggEBAKR7bCdXDorzjfCXI76D5DOsLXinMkYh1h8z
srkwMulk5Pm4/IUNJY6Cy5LSzbcLzbLtT27KZEtCsa/Ow+d0/UBd
EOSbZI26KveehR7TFI+x+g0kjPXbd1Di+4LqvQWILa3ccXQrs5HtYE
rb7Gzoa6POm2yglqJcAC6Xi1pG2KObfpu30KtIAu3yRzxHgsov7hz
/Cfe309U+fUprH3sX75/41KBarmVb/IJSfU52V2dzMVSA6+Lx9+l+
17gfYJS4/XFdKp74/uYXbIpRJNPgOxk69dRD+tZeWUVcnnsLUofa
pWPdd9foLPQRGpJFX9tidiq/UW6ihammjkS3HPwFFNcCAwEAA
aAAMA0GCSqGSIB3DQEBCwUA4IBAQAp6KwXS5G0hW46H4W
l+m4mA42sfa0grjfK4HZB1M9oS72ZJxTctnICnDIVzYHER3cJJXiLil
W4Qcb/acnUeUMpNUqhh/+3aJaz/AoO+PF+C3dm2ZSKBdDoTw
Od2BNTjSFDy6DpIPe+fghwNExW4O5QvW0mSJxp9qHn1LaNoS
6QZIgqtBRSw+P1AQY1gJcjyc4OKvo+R0n7gUwgEL62ht9HFSiKiKr
cBtZW+A/JmVB9RLx2RuEe9mYbA8xE0aY1LDpouonNhZykrMeu
gDGppbg7jnZAJMsoOPU7gLf9XKjXgfnoLcQaqjvIG9mgMtB1XW
HEVL7xExMaRkWebSfenfhY-----END CERTIFICATE REQUEST-----

Visual Studio and Xamarin Environment

Pair Visual Studio to the Mac



Xamarin is similar to Andriod Studio



How to set up SpectatorView

8/27/2018 – Part 3

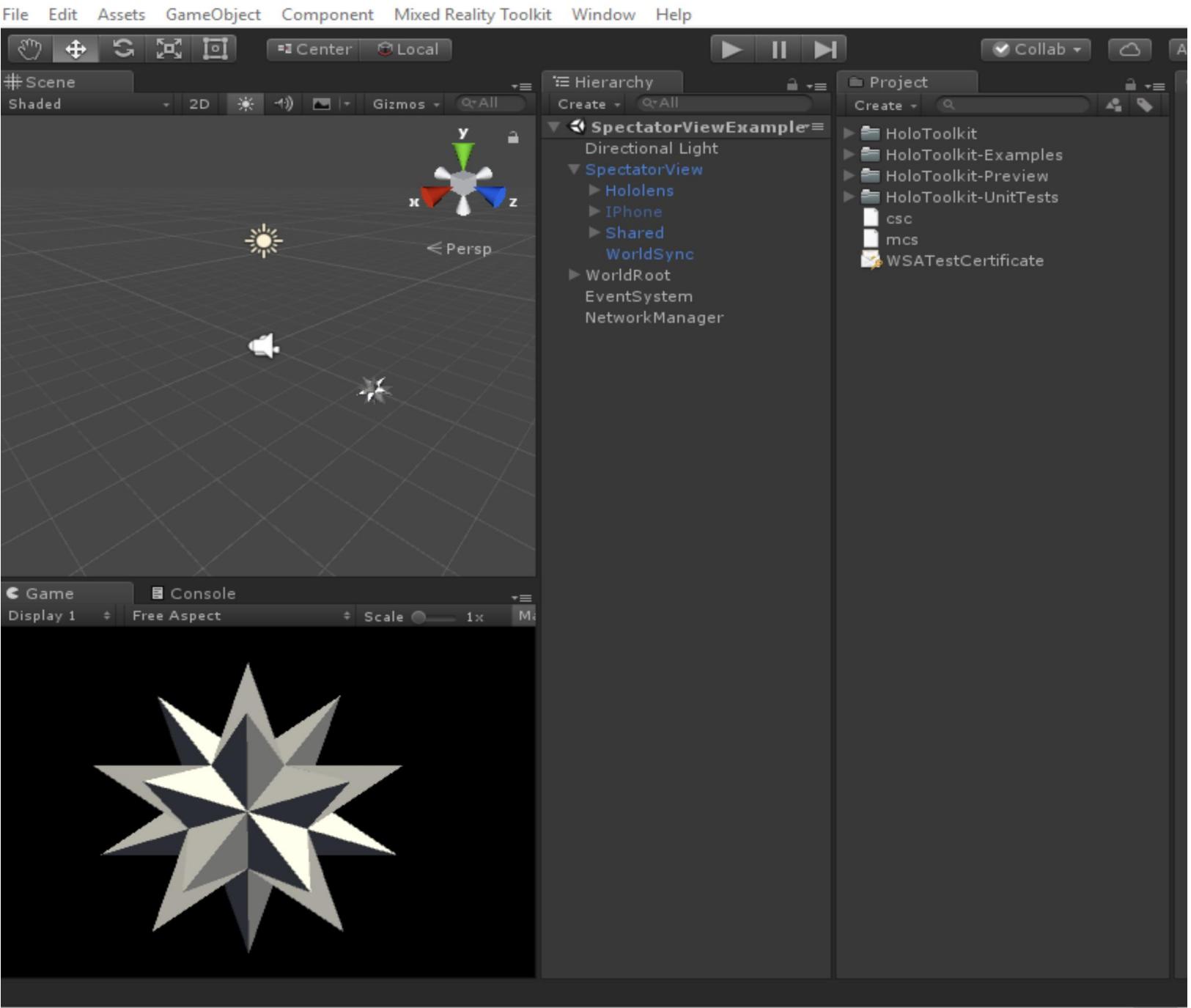


SpectatorView Demonstrations

- <https://www.youtube.com/watch?v=QNdCp9Zmctc>
- <https://youtu.be/tiXA9CW8iAs>
- https://www.youtube.com/watch?v=tJs1YQkG_Yw

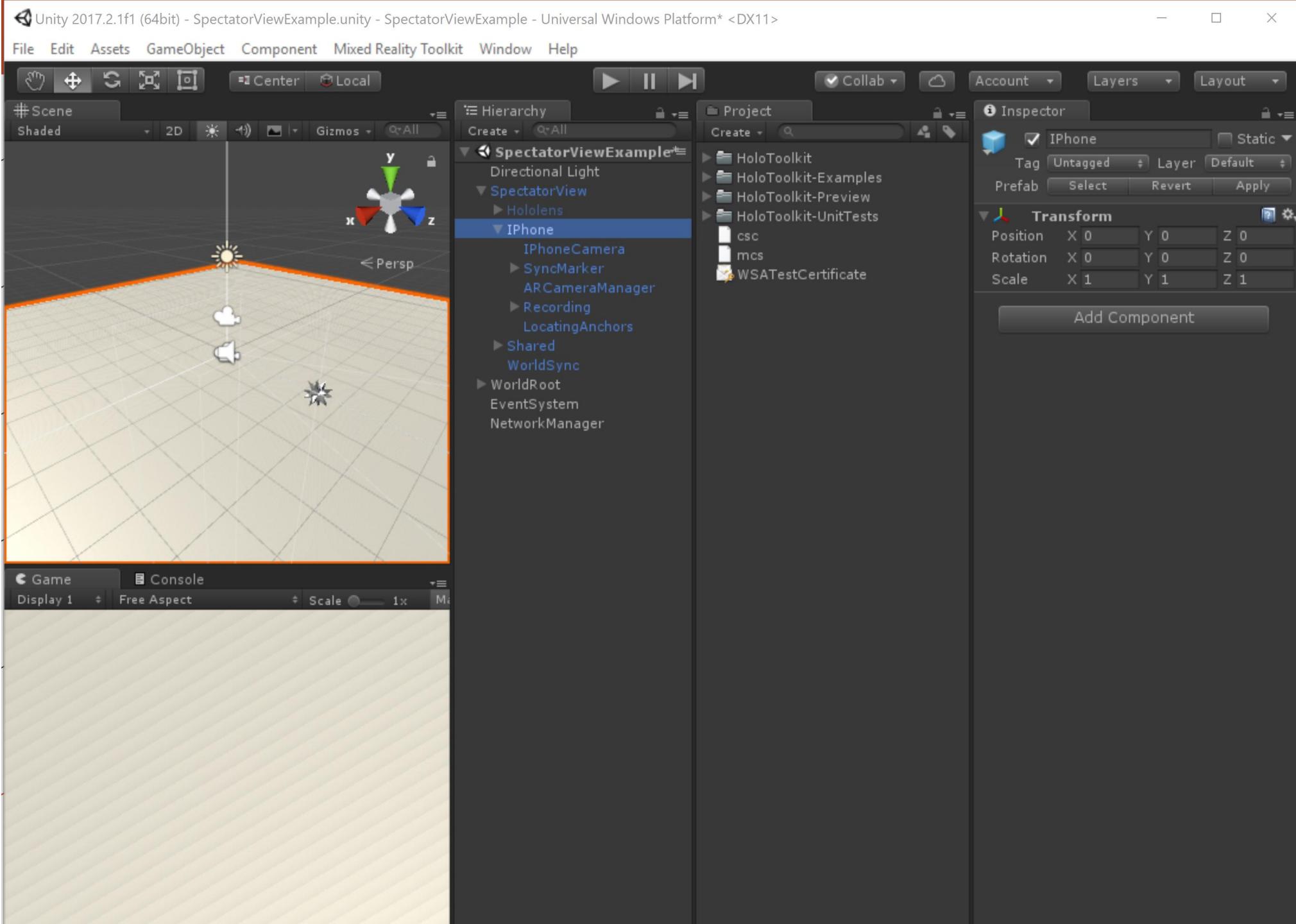
Documentation:

- <https://docs.microsoft.com/en-us/windows/mixed-reality/spectator-view>



Unity with SpectatorView for Hololens

Unity with SpectatorView for iPhone



Windows Project from Unity Build

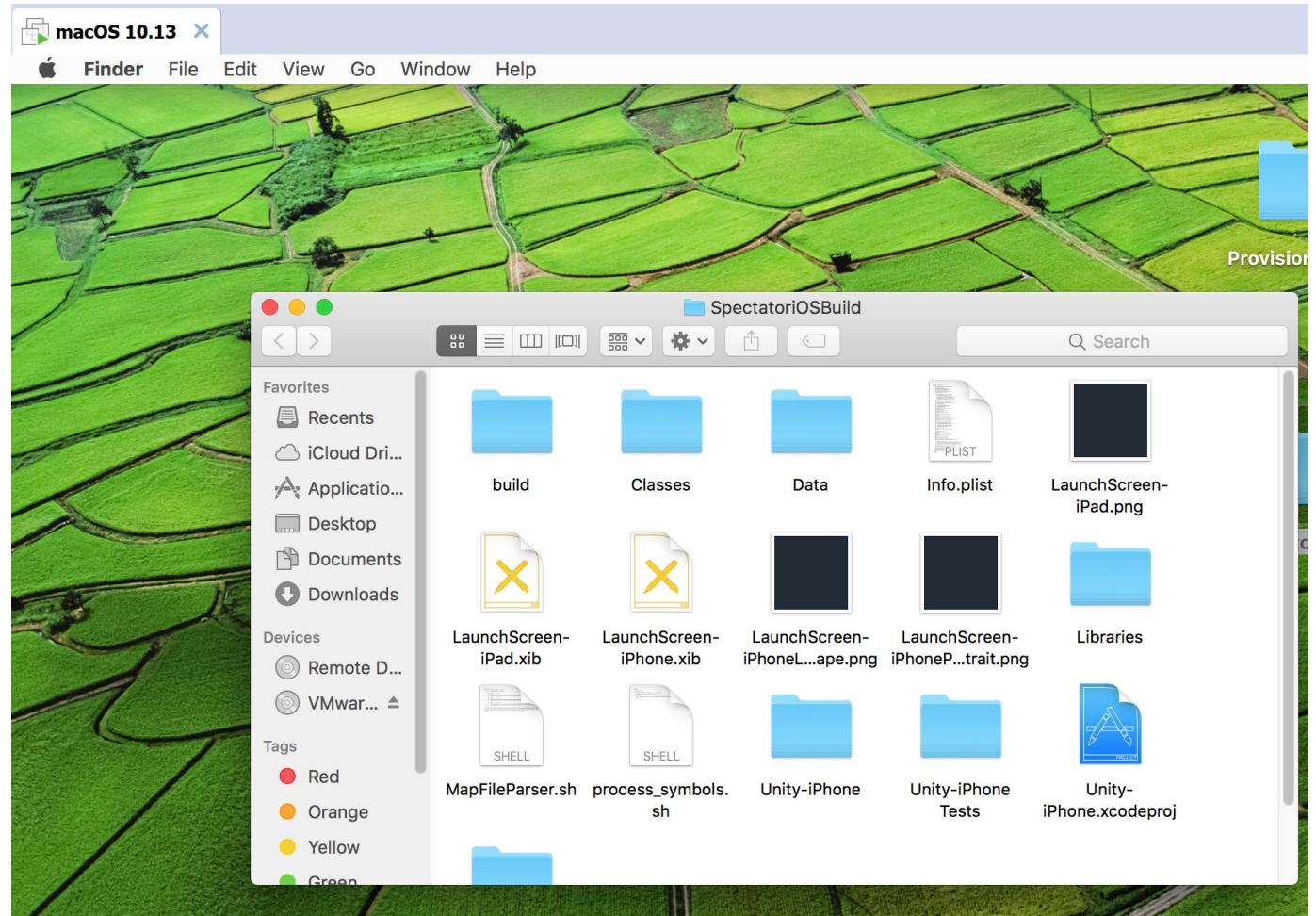
Local Disk (C:) > SpectatorView > SpectatorHoloLensBuild				▼	↻	Search SpectatorHoloLensB... 🔎
<input type="checkbox"/> Name	Date modified	Type	Size			
📁 .vs	8/24/2018 6:55 PM	File folder				
📁 SpectatorAppleDemo	8/24/2018 8:30 PM	File folder				
📁 Unity	8/9/2018 12:23 AM	File folder				
📌 15 SpectatorAppleDemo.sln	8/9/2018 12:23 AM	Visual Studio Solu...	3 KB			
🔧 UnityCommon.props	8/9/2018 12:23 AM	Project Property Fi	1 KB			
📄 UnityOverwrite.txt	8/9/2018 12:23 AM	Text Document	2 KB			

iOS Project from Unity Build

Local Disk (C:) > SpectatorView > SpectatoriOSBuild			
	Name	Date modified	Type
	build	8/9/2018 12:39 AM	File folder
	Classes	8/9/2018 12:40 AM	File folder
	Data	8/9/2018 12:39 AM	File folder
	Libraries	8/9/2018 12:40 AM	File folder
	UnityData.xcassets	8/9/2018 12:40 AM	File folder
	Unity-iPhone	8/9/2018 12:40 AM	File folder
	Unity-iPhone Tests	8/9/2018 12:40 AM	File folder
	Unity-iPhone.xcodeproj	8/9/2018 12:40 AM	File folder
	_.build	12/5/2017 11:57 A	_BUILD File
	Info.plist	8/9/2018 12:39 AM	PLIST File
	LaunchScreen-iPad.png	12/5/2017 10:08 A	PNG File
	LaunchScreen-iPad.xib	12/1/2017 1:40 AM	XIB File
	LaunchScreen-iPhone.xib	12/1/2017 1:40 AM	XIB File
	LaunchScreen-iPhoneLandscape.png	12/5/2017 10:08 A	PNG File
	LaunchScreen-iPhonePortrait.png	12/5/2017 10:08 A	PNG File
	MapFileParser.sh	12/2/2017 4:40 AM	Shell Script
	process_symbols.sh	12/2/2017 4:40 AM	Shell Script

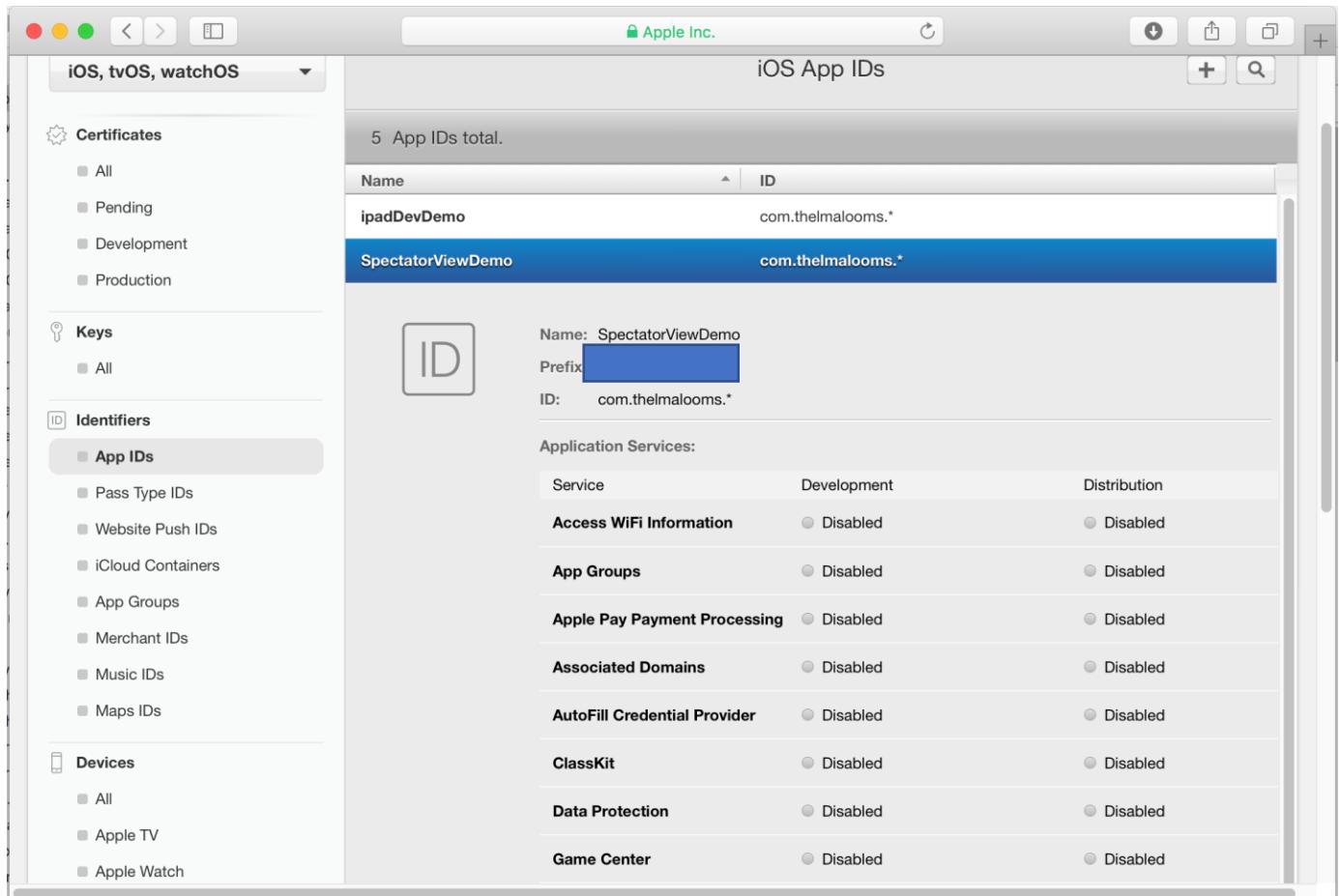
Copy Build Files Over to the Mac for use in Xcode

iOS Unity Build Transferred to the Mac



Set up “App ID” for SpectatorView Demo App

Already have a certificate and
device



Set up “Provisioning Profile”

Already have a certificate and device

iOS Provisioning Profiles (Distribution)

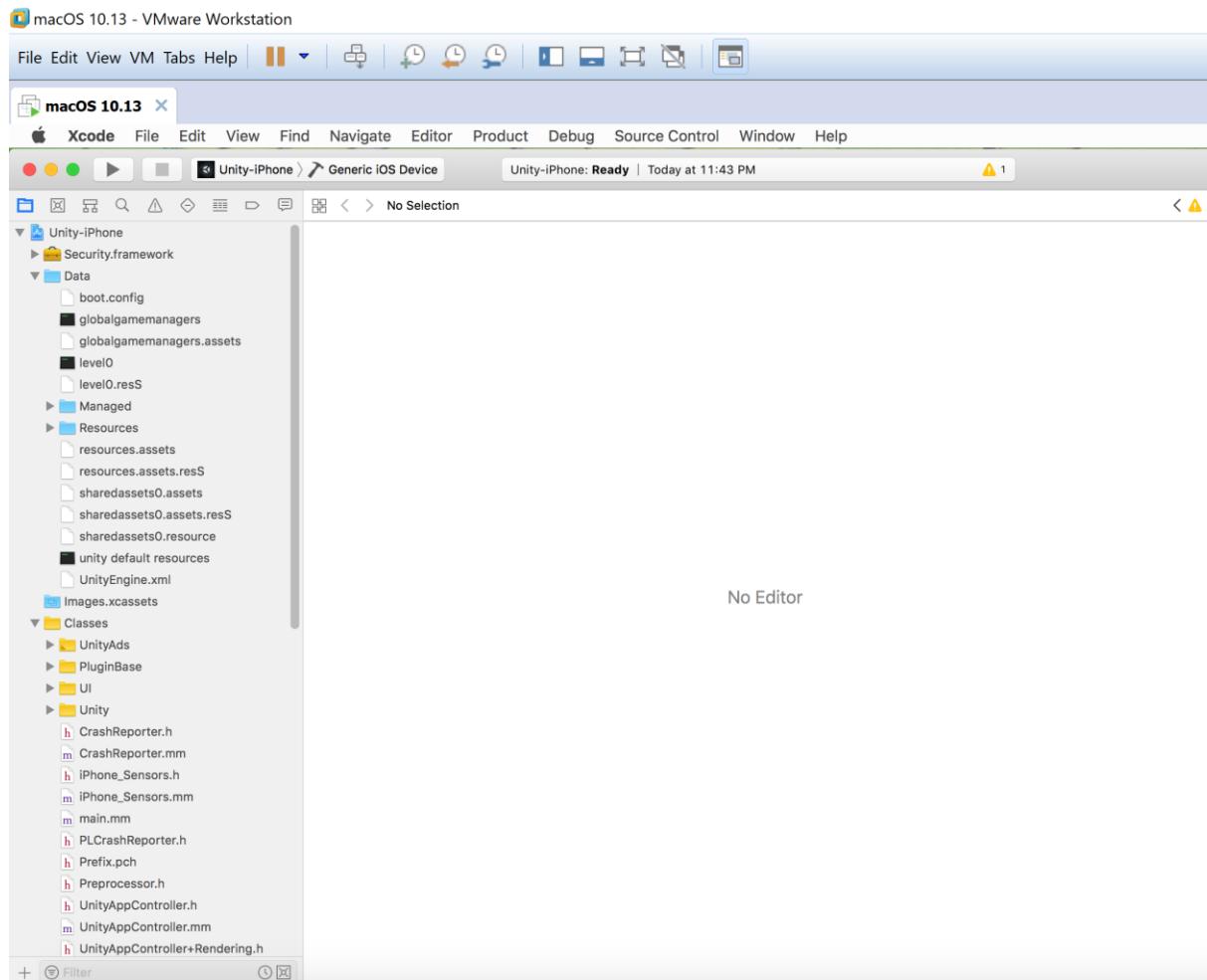
Name	Type	Status
iPadDevDemo	iOS Distribution	Active
SpectatorViewDemo	iOS Distribution	Active

SpectatorViewDemo

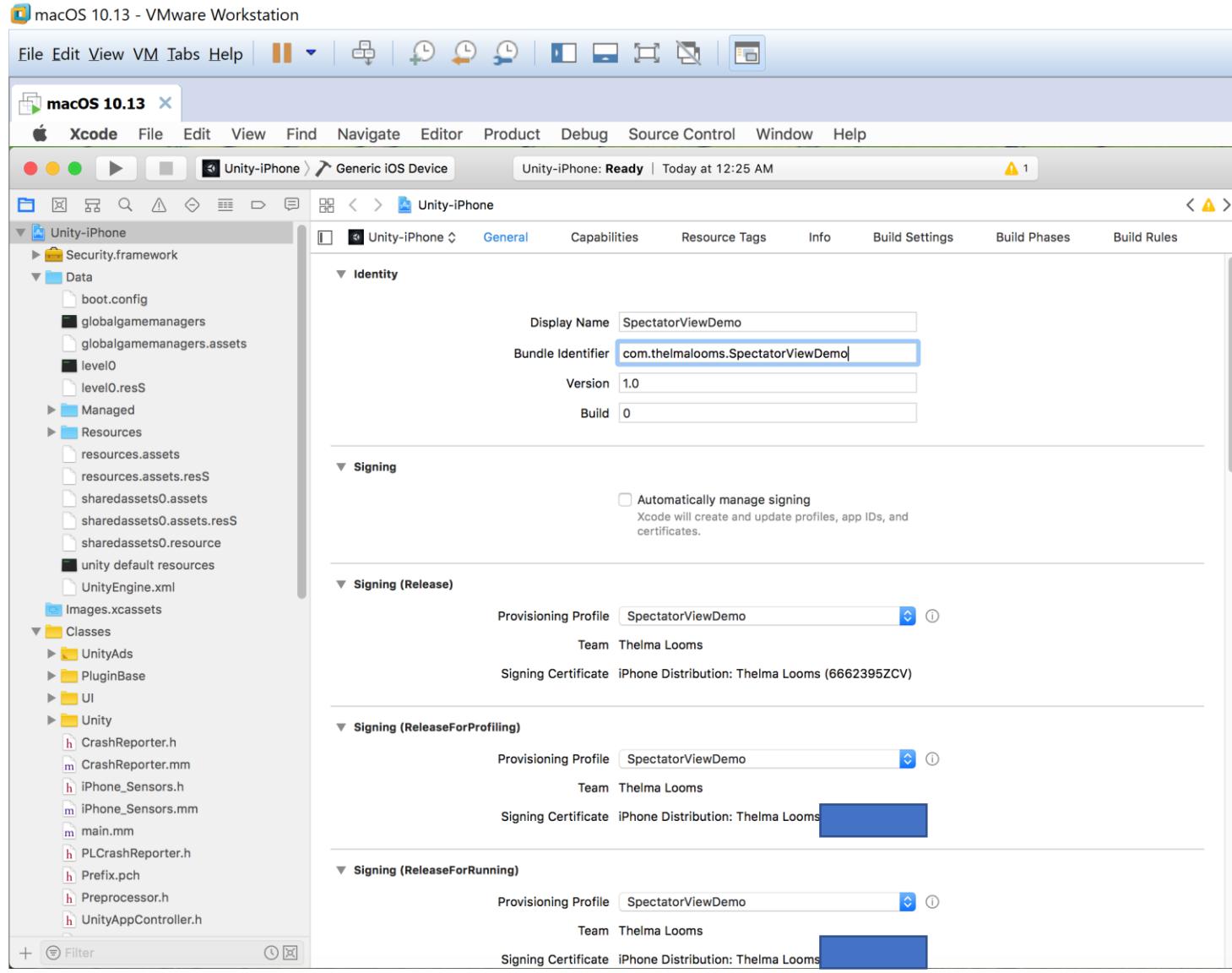
Name:	SpectatorViewDemo
Type:	iOS Distribution
App ID:	SpectatorViewDemo (com.thelmalooms.*)
Certificates:	1 total
Devices:	1 total
Enabled Services:	None
Status:	Active
Expires:	Aug 20, 2019

Delete Edit Download

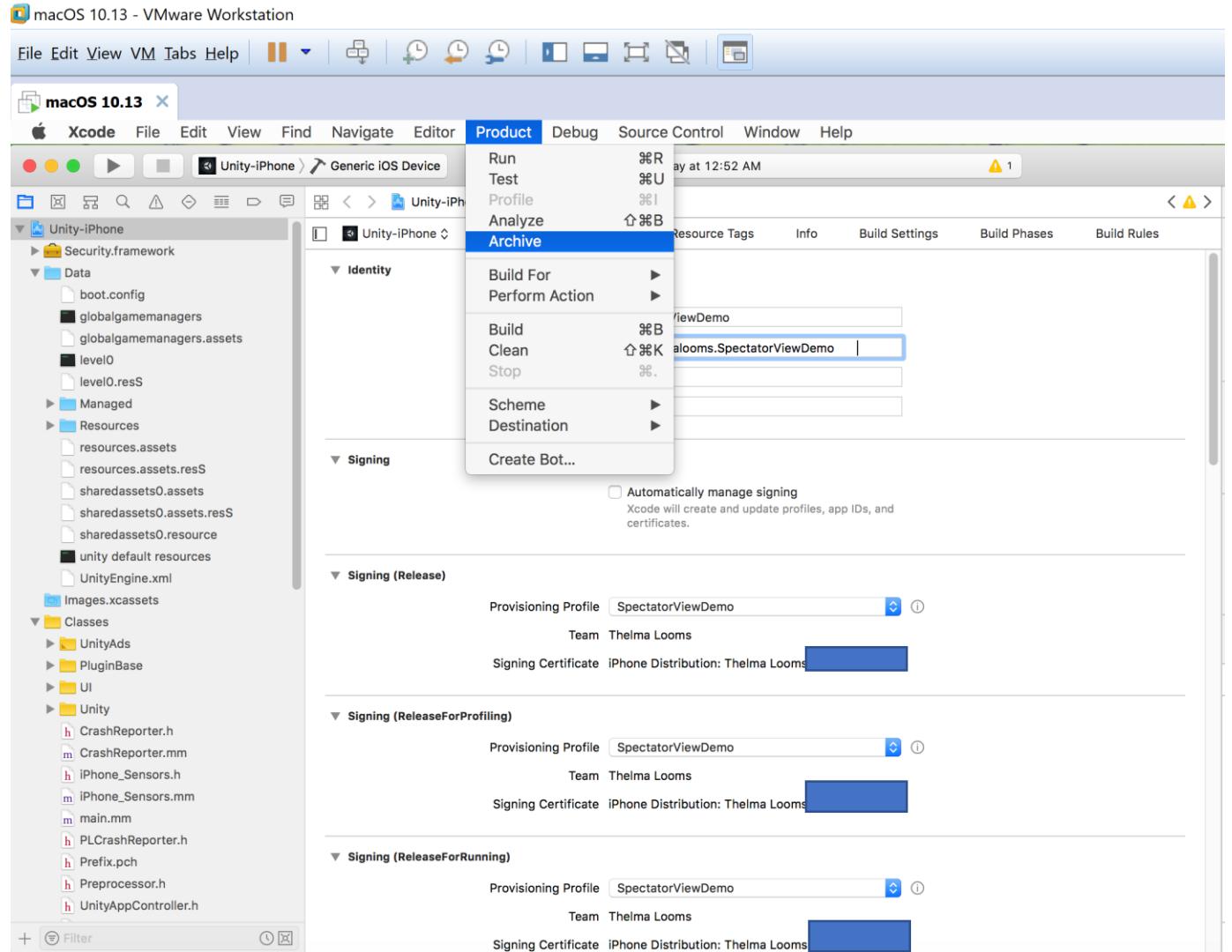
Open Unity iOS Xcode Project



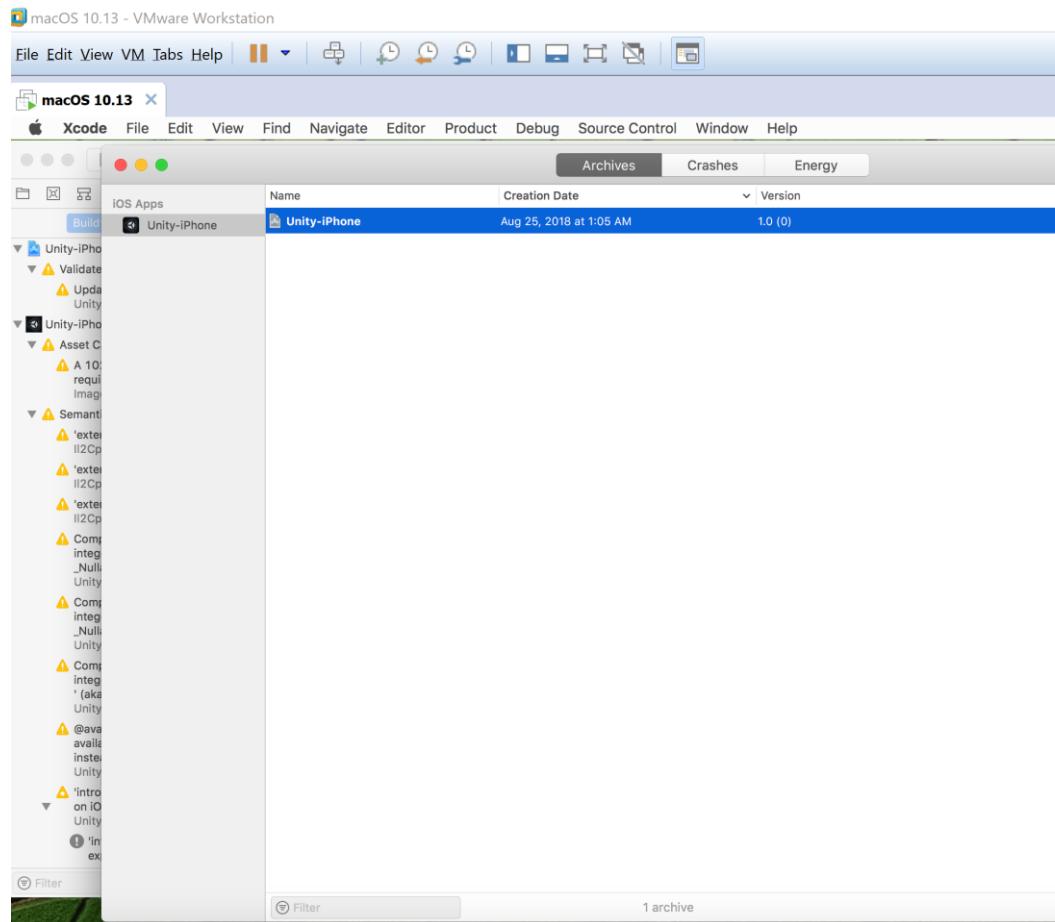
Xcode Provisioning Profile



Create IPA File



Finish Archive



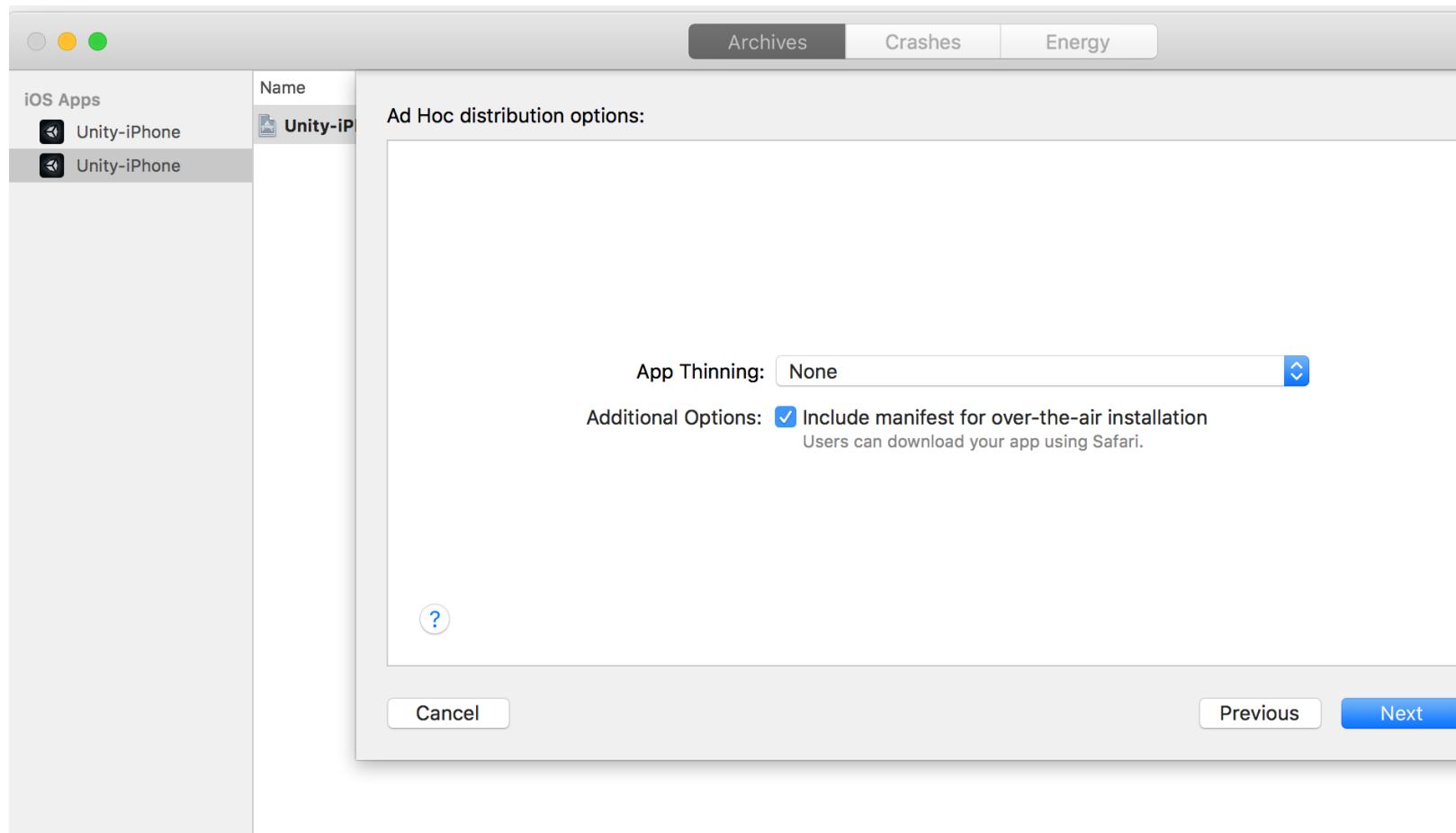
Deployment Options

Option 1:
Over the air – your web server
(Ad Hoc)

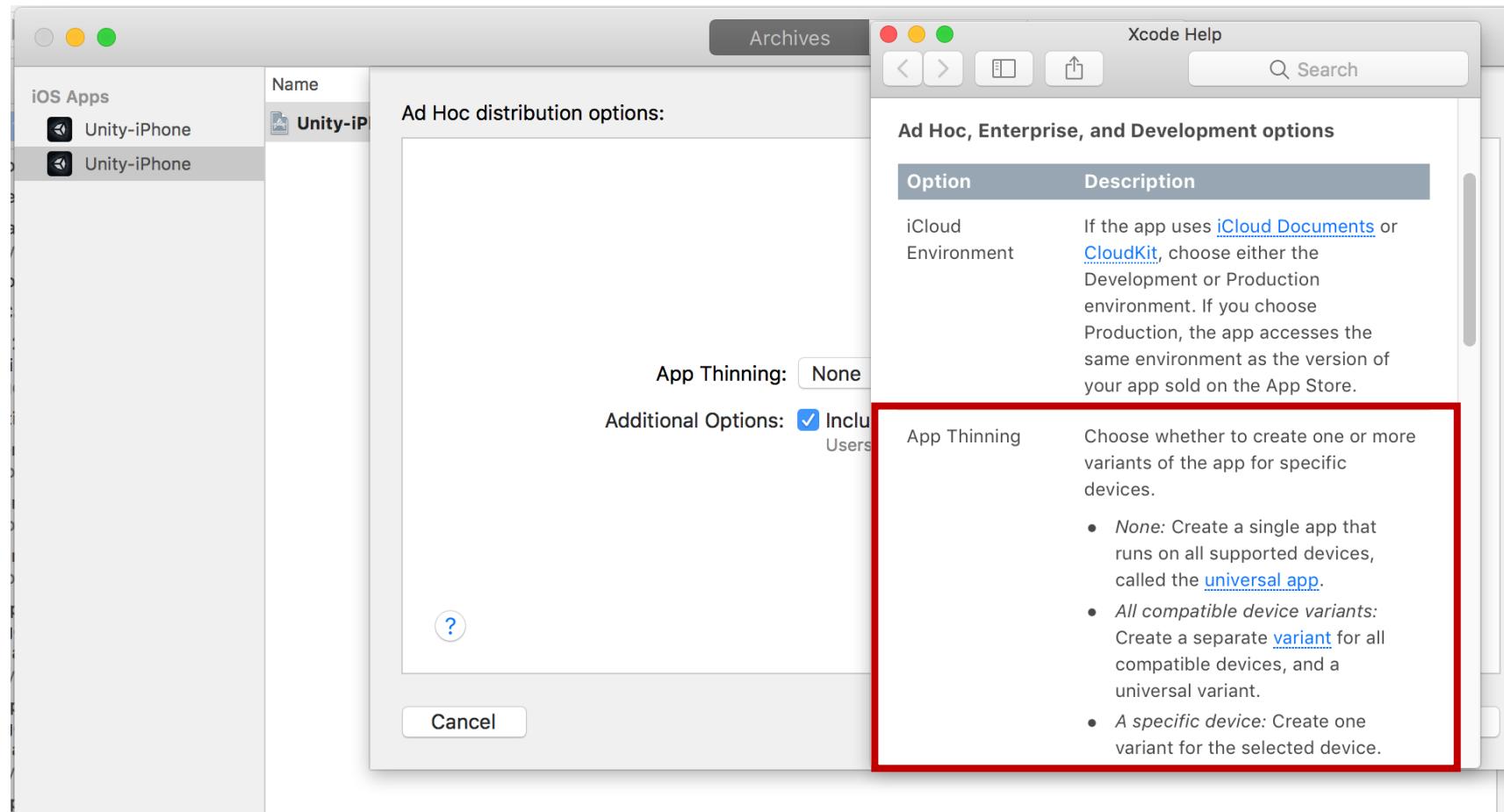
Option 2:
via iTunes (Ad Hoc)

Option 3:
via Apple Store

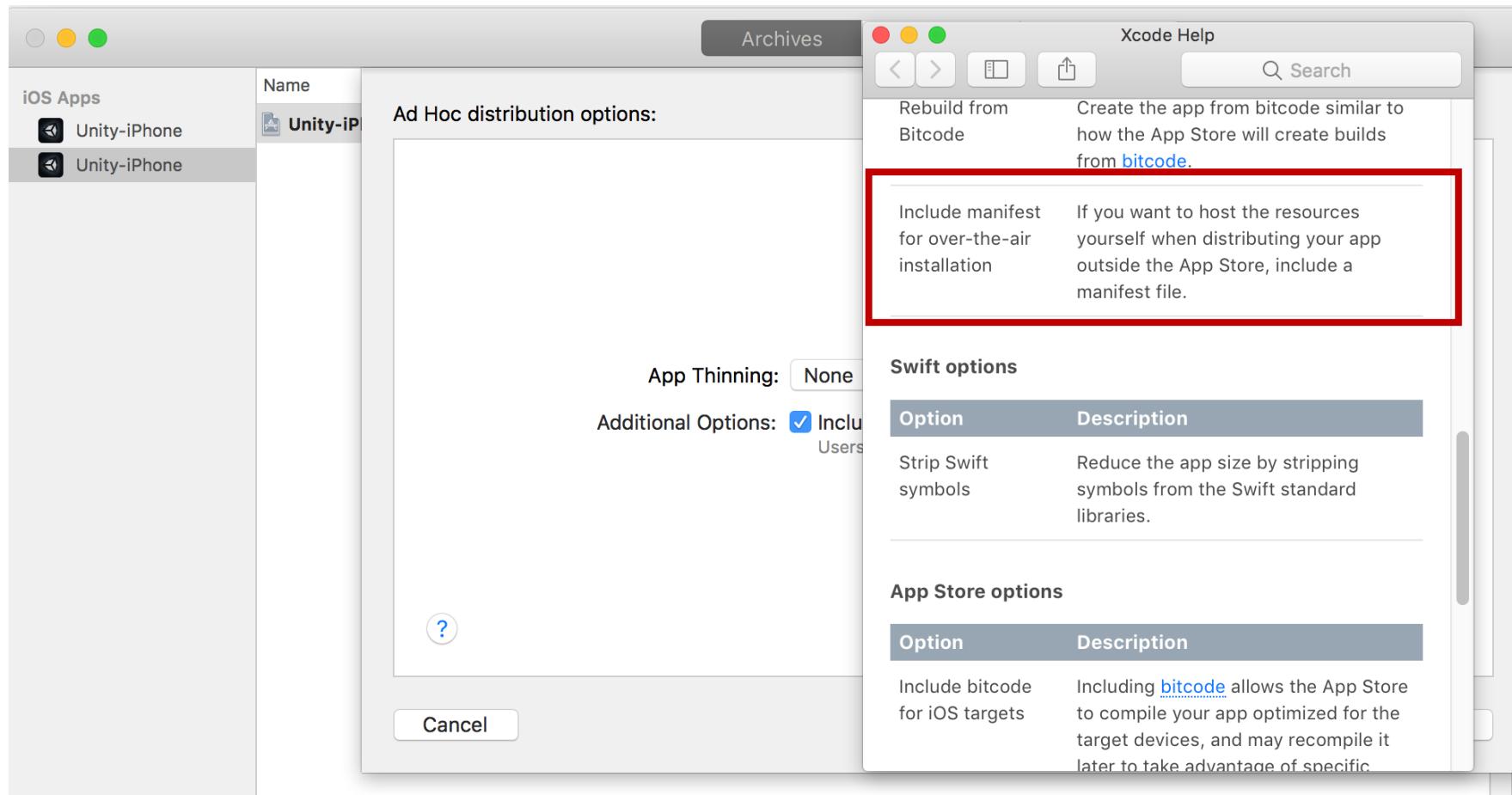
Option 1: Over-the-air-installation



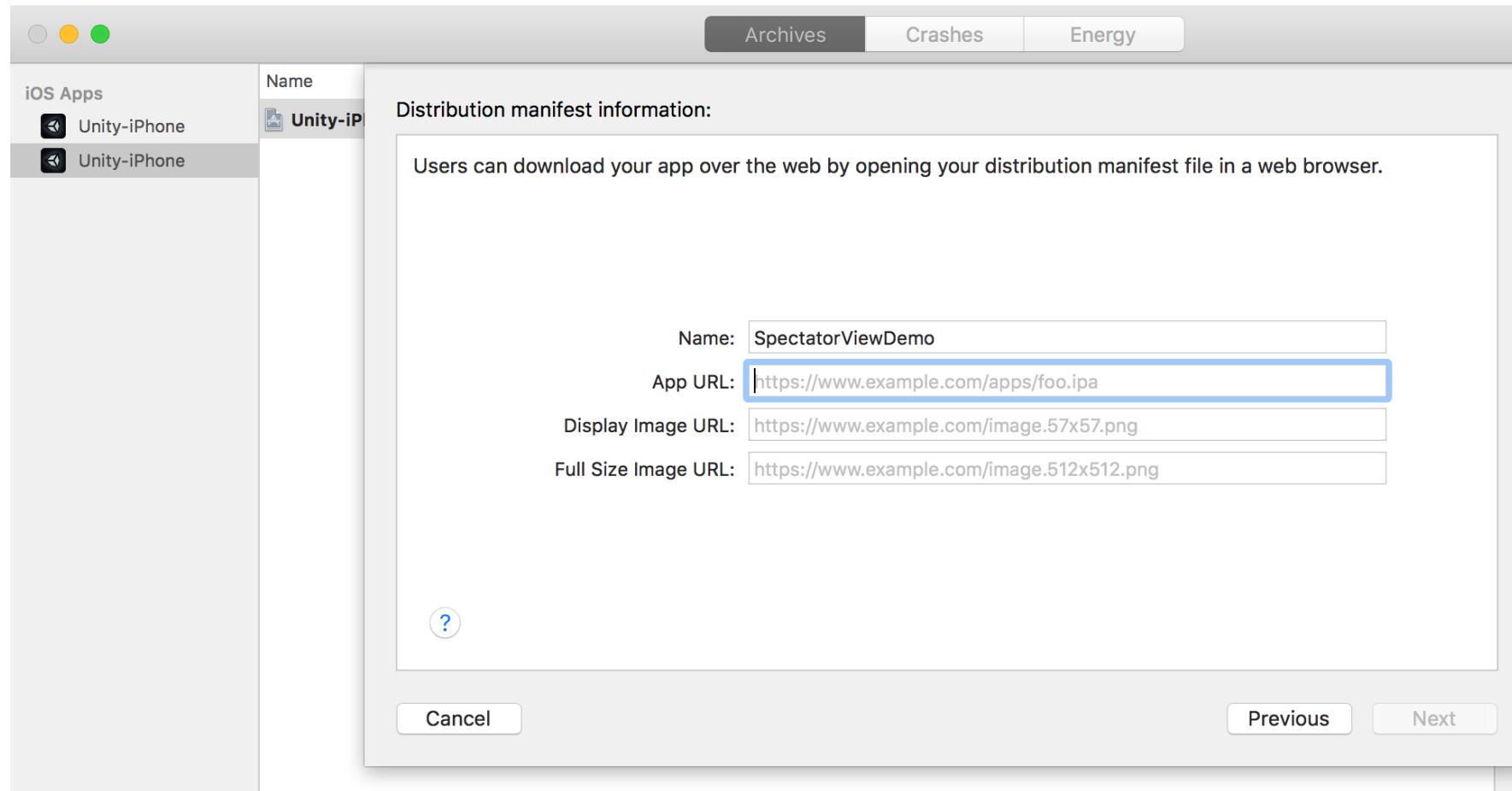
Option 1: App Thining Description



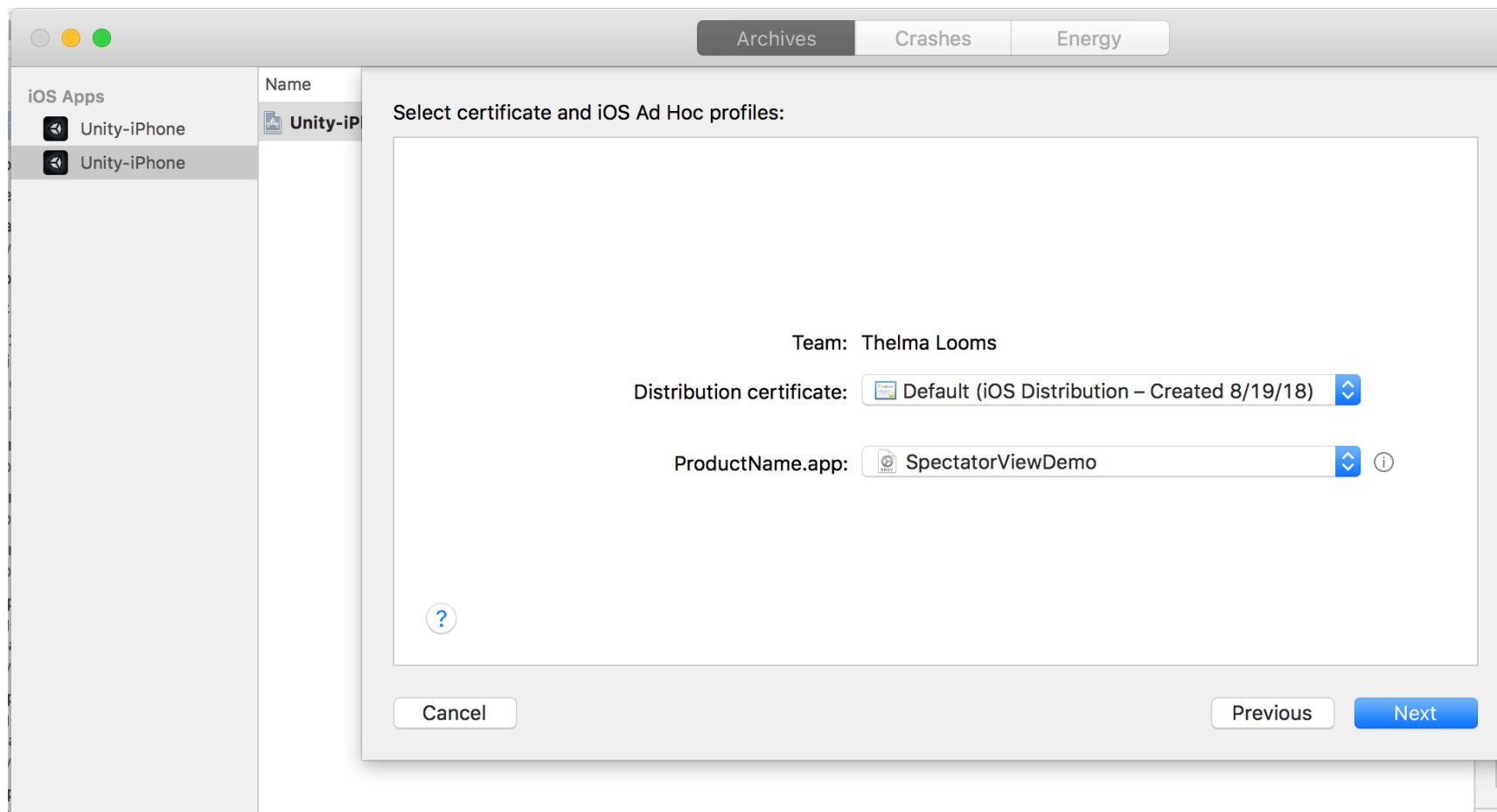
Option 1: Include Manifest Description



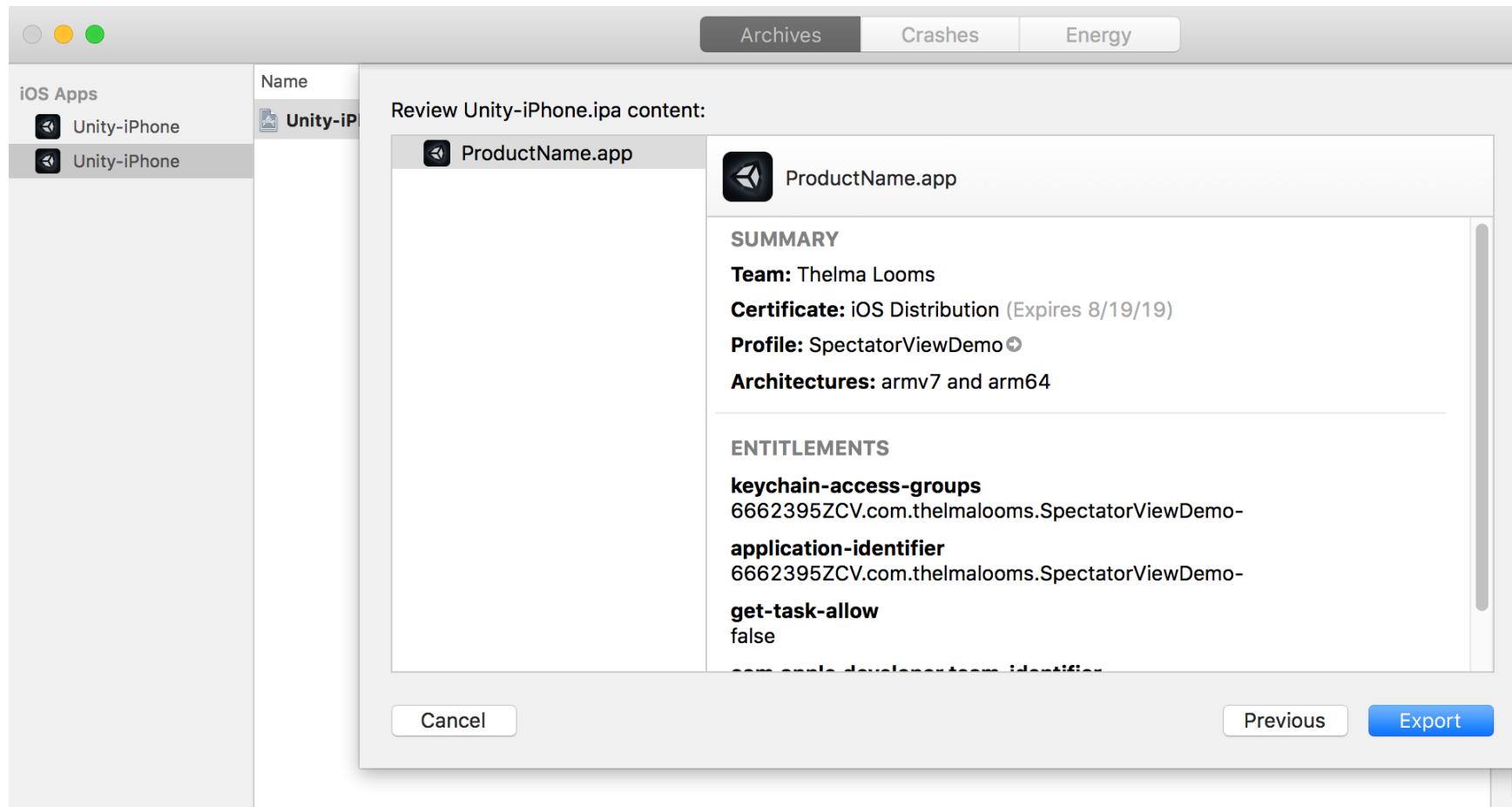
Option 1: Deploy over-the-air setting URL



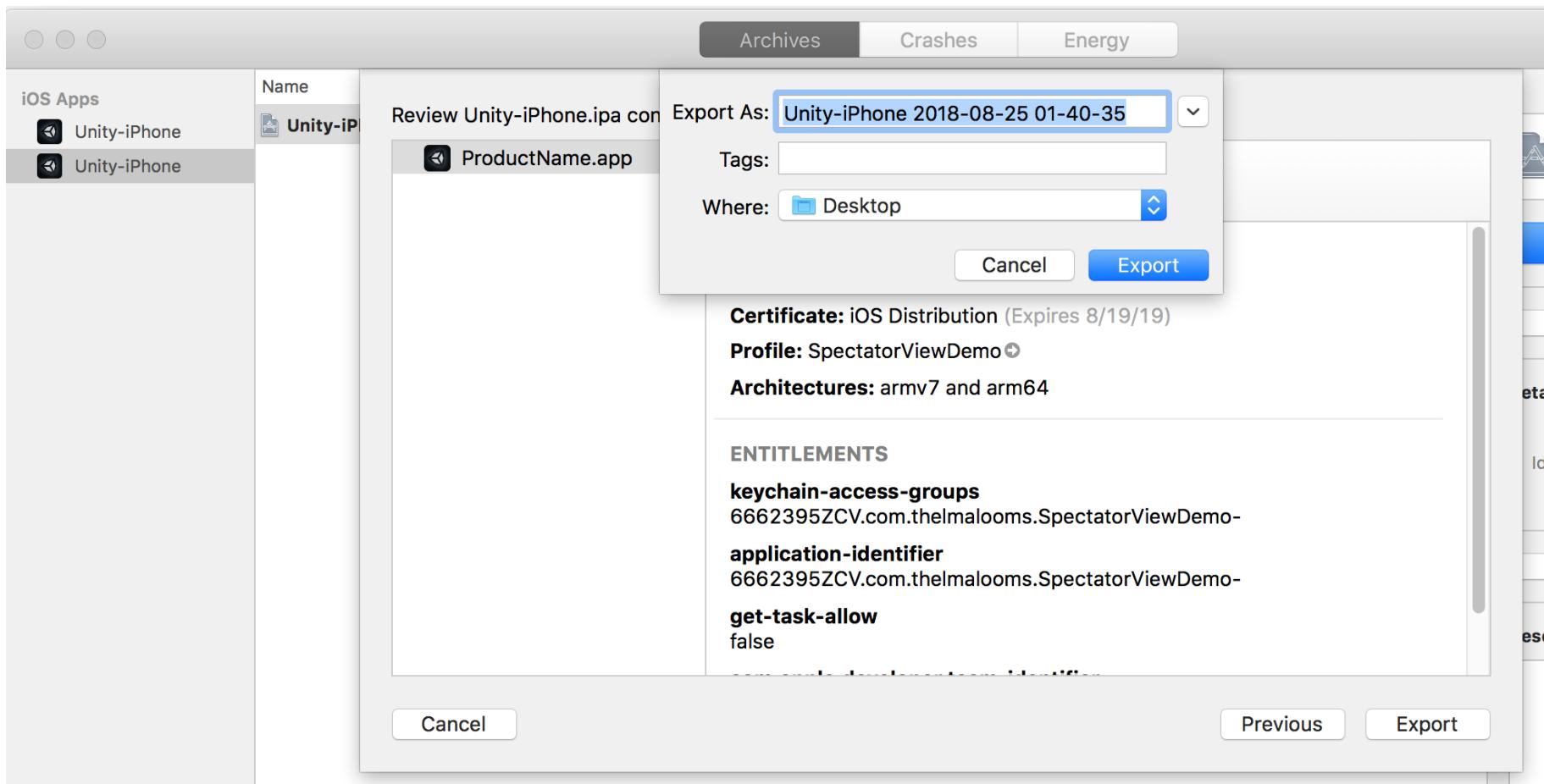
Option 2: Deploy via iTunes (1)



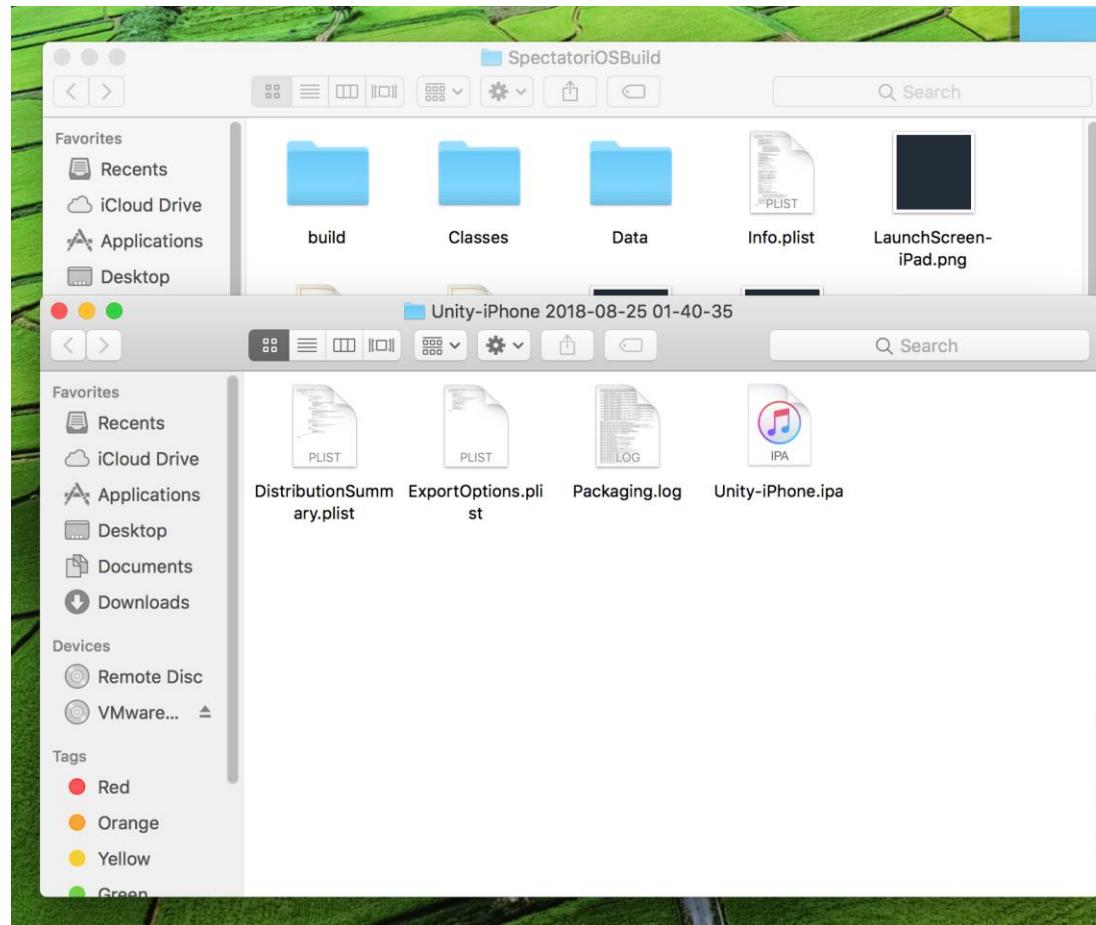
Option 2: Deploy via iTunes (2)



Create ipa file



Completed .ipa File



Configuration and Software Packages

Windows 10

(all development is done here)

- fastlane
- Ruby
- Visual Studio 2017
- C#
- Unity 2017.2.1f1/Unity ARKit
- HoloLens MRTK
- VMWare Unlocker 2.1.1
- Vcpkg
- iTunes
- Unity-SpectatorView-Hololens-Project

MacOS 10.13 running on VMWare 14:

(used as certification and build host)

- Xcode
- Keychain Access
- Downloads from the developer site
- Unity-SpectatorView-iOS Project
- C/C++

Microsoft HoloLens:

- Build:
17134.228x86fre4_release_svc_prod
1.180802-172

Apple:

- iPad or iPhone
- Apple Developer Account