## How can I get an Apple Certificate

Without these steps a downloading of your App on your Iphone is not possible.

If VS breaks with this error:

8

No valid iOS code signing keys found in keychain. You need to request a codesigning A certificate from https://developer.apple.com.

AppBayFinal2018V2.iOS

Then login at Applepage <u>https://developer.apple.com</u> with a valid developper account. You can get a free one, but if you want to publish your app in the apple store you need a professional account, which costs 99\$ a year. We have bought this professional account.

Go to page

https://developer.apple.com/account/ios/certificate/development/create

iOS, tvOS, watchOS	Add iOS Certificate
Certificates	Select Type Request Generate Download
Pending	M
Development	About Creating a Certificate Signing Request (CSR)
Production	
🖞 Keys	
≡ All	To manually generate a Certificate, you need a Certificate Signing Request (CSR) file from your Mac. To create a CSR file, follow the instructions below to create one using Keychain Access.
D Identifiers	
App IDs	Create a CSR file. In the Applications folder on your Mac, open the Utilities folder and launch Keychain Access.
Pass Type IDs	
Website Push IDs	Within the Keychain Access drop down menu, select Keychain Access > Certificate Assistant > Request a Certificate from a Certificate Authority.
iCloud Containers	· · · · · · · · · · · · · · · · · · ·
App Groups	<ul> <li>In the Certificate Information window, enter the following information:</li> </ul>
Merchant IDs	In the User Email Address field, enter your email address.
Music IDs	<ul> <li>The Common Name field, create a name for your private key (e.g., John Doe Dev Key).</li> <li>The CA Email Address field should be left empty.</li> </ul>
Maps IDs	In the "Request is" group, select the "Saved to disk" option.
Devices	Click Continue within Keychain Access to complete the CSR generating process.
Devices	
= All	

Follow the given steps.

In the Mac I have created a new Keychain with name "xamarin" which is "default" and with the screenshot step by step have created a "certificate" and downloaded on the Mac- desktop. Name and Passwort are xamarin, Date is 18.12.2018.

But this is not enough. You need a "Provisioning profile". There after creation of an Apple-ID the serial number of your iPhone is connected to this apple ID. My mobile is "Jörgs's Handy", connected with my Apple ID TACQ98HFC2.com.bay.\*

This is very good described on following page:

https://docs.microsoft.com/de-de/xamarin/ios/get-started/installation/device-provisioning/manual-provisioning?tabs=macos

Here the sreen shots of all pages (14) oft that page:

# Manual provisioning for Xamarin.iOS

15.07.2017 • 21 Minuten Lesedauer • Beitragende 🌒 🎌

Once Xamarin.iOS has been successfully installed, the next step in iOS development is to provision your iOS device. This guide explores using manual provisioning to set up development certificates and profiles.

#### () Hinweis

The instructions on this page are relevant for developers who have paid access to the Apple Developer Program. If you have a free account, please take a look at the <u>Free provisioning</u> guide for more information about on-device testing.

## Creating a signing identity

The first step in setting up a development device is to create a signing identity. A signing identity consists of two things:

- A Development Certificate
- A private key

Development certificates and associated keys are critical for an iOS developer: they establish your identity with Apple and associate you with a given device and profile for development, akin to putting your digital signature on your applications. Apple checks for certificates to control access to the devices you are allowed to deploy.

Development teams, certificates, and profiles can be managed by accessing the <u>Certificates, Identifiers & Profiles</u> (login required) section of Apple's Member Center. Apple requires you to have a signing identity to build your code for device or simulator.

#### Wichtig

It is important to note that you can only have two iOS Development certificates at any one time. If you need to create any more, you will need to revoke an existing one. Any machine using a revoked certificate will not be able to sign their app.

To Generate a signing identity, do the following:

1. Login to the <u>Certificates, Identifiers, and Profiles section of the Developer Portal</u> and select the Certificates section from the iOS Apps column. Then, hit the + to create a new certificate:



Select the iOS App Development option for the certificate type and click Continue. This screen may look different depending on your account privileges:





. Request a Certificate Signing Request, which will be uploaded to generate a certificate manually. To do this, launch Keychain Access on a Mac. Navigate to the main menu, and select Certificate Assistant and Request a Certificate from a Certificate Authority..., as illustrated below:

Keychain Access	File Edit	View Window Help
About Keychain A	Access	
Preferences	ж,	
Keychain First Aid	ANT b	
Certificate Assist	ant 🕨	Open
Ticket Viewer	ご第K	Create a Certificate
Services	Þ	Create a Certificate Authority Create a Certificate For Someone Else as a Certificate A
Hide Keychain Ac Hide Others Show All	cess 第H て第H	Request a Certificate From a Certificate Authority Set the default Certificate Authority Evaluate "com.apple.idms.appleid.prd.6964684c4f4f7;

. Fill in your information, and select the option to Save to disk:



### 5. Save the CSR at a location where it can be easily found:

Save As:	CertificateSigningRequest.certSigningR
Where:	Desktop ÷
6	Cancel Save v
Oert	CA Email Address: Request is: Emailed to the CA Saved to disk Let me specify key pair information
	Continue

6. Return to the Provisioning Portal, upload the Certificate to the portal, and submit:

Add iOS Certificate	+ 9
Select Type Request Generate Approval	
Generate your certificate.	
With the creation of your CSR, Keychain Access simultaneously generated a public and private key pair. Your private key is stored on your Mac in the login Keychain by default and can be viewed in the Keychain Access application under the "Keys" category. Your requested certificate will be the public half of your key pair.	ate
Upload CSR file. Select .certSigningRequest file saved on your Mac.	
Choose File_ CertificateSigningRequest.certSigningRequest	
	-
Cancel Back Generate	Q

Ir

ŀ

If you do not have admin privileges, the Certificate must be approved by an admin or team agent.

7. Once the Certificate is approved, download it from the Provisioning Portal:

ina Vyedina				iOS Development	Jun 04, 2014	
Centificate	Name:	Nina	Vyedina			
	Type:	iOS D	evelopment			
	Expires:	Jun 0	4, 2014			
	Revo	ke	Download			Q

8. Double-click on the downloaded Certificate to launch Keychain Access and open the My Certificates panel, showing the new certificate(s), and associated private key:

Keychains Iogin Cloud System System Roots	iPhone Developer: Amy Burns ( issued by: Apple Worldwide Developer Relations Expires: Saturday, January 7, 2017 at 3:24:23 Ph This certificate is valid	Certification Authori Eastern Standard Ti	ty ime	0.41
	Name - Constant for any second for	∧ Kind	Expires Jul 26, 2017, 3:16:09 PM Dec 2, 2017, 12:09:44 PM	Keychain Iogin Iogin
Category	V 📰 iPhone Developer: Amy Burns (	certificate	Jan 7, 2017, 3:24:23 PM	login
All Items Passwords Secure Notes My Certificates Keys Certificates	Y Amy Burns	private key	 Sep 14, 2017, 3:33:47 РМ	login
	23 D 1700	Alterna		

### Understanding certificate key pairs

Visual Studio for Mac Visual Studio

The Developer Profile contains certificates, their associated keys, and any provisioning profiles associated with the account. There are actually two versions of a Developer Profile — one is on the Developer Portal, and the other lives on a local Mac. The difference between the two is the type of keys they contain: *the Profile on the Portal houses all the public keys associated with your certificates, while the copy on your local Mac contains all the private keys.* For the certificates to be valid, the key pairs must match. Keep a backup of the Developer Profile on the local Mac, because if the private keys are lost, all the certificates and provisioning profiles will need to be regenerated.

#### ▲ Warnung

Losing the certificate and associated keys can be incredibly disruptive, as it will require revoking existing certificates and re-provisioning any associated devices, including those registered for ad-hoc deployment. After successfully setting up Development Certificates, export a backup copy and store them in a safe place. For more information on how to do this, refer to the Exporting and Importing Certificates and Profiles section of the <u>Maintaining Certificates</u> guide in Apple's docs.

### Provisioning an iOS Device for development

Now that you've established your identity with Apple and have a development certificate, you must set up a provisioning profile and the required entities so it is possible to deploy an app to an Apple device. The device must be running a version of iOS that is supported by Xcode — it may be necessary to update the device, Xcode or both.

## Add a device

When creating a provisioning profile for development, we must state which devices can run the application. To enable this, up to 100 devices per calendar year can be added to our Developer Portal, and from here we can select the devices to be added to a particular provisioning profile. Follow the steps below on your Mac to add a device to the Developer Portal

- 1. Start Xcode.
- 2. Connect the device to be provisioned to the Mac with its supplied USB cable.
- 3. From the Windows menu select Devices:

Window	Help	
Minimiz Zoom	e	жм
Show N Show P	ext Tab revious Tab	30) 36{
Docume Welcom Devices Organiz	entation and API Reference le to Xcode er	0 #0 0 #1 0 #2
Bring Al	I to Front	-

3. Select the desired iOS device from the DEVICES list on the left side of the Devices Window.

### 4. Highlight the Identifier string and copy it to the clipboard:

•••	Device Informatio	-	
DEVICES Mr Mar	Name	Nostrono	
10.10.3 [14087h]	Model	Phone 6 Plus	
Nostromo	Capacity	55.69 GB (21.2 GB available)	
E ELS (ISSNEE)	Battery	100N	
SIMULATORS	ios	8.1.3 (120466)	
7.1 (v/s)	Identifier	1008254000+81961599-15x101289-15x20128947+x203841	
#ad 2 8.1 (126411)	View Device Logs	b Take Screenshot	- Joy
Pad Ar			

5. In Safari, navigate to the Apple Developer Center and log in.

6. Click the Certificates, Identifiers & Profiles link:



### 7. Click on the Devices link:

Devices	
= All	
Apple TV	
Apple Watch	
≡ iPad	
■ iPhone	0
iPod Touch	a

### 8. Click the + button:

🗴 Developer		Technologies	Resources	Programs	Support	Member Center	Q Search Developer
Certificates, Identi	fiers &	Profiles					Kevin Mullins 💌
iOS Apps	•				iOS Devi	ces	+ × Q
③ Certificates		You can register 9	93 additional	devices.			
= All		Name		1	UDID		
Pending		Nostromo			STATIST.	an an an an an a	. W. 19960 M 19953
Development     Production		Kevin's iPhone 5			850 Y.J	inite sease states	Rawward?
		Navi			< 100073.	seat-to-twee	es and

9. Provide a name for the new device and paste the device Identifier that we copied above into the UUID field:

Name your o	device and enter its Unique Device Identifier (UDID).	
Name:	Amy's iPhone 7	
UDID:	7ff473b53	
		Q

### 10. Click the Continue button.

11. Finally, review the information and click the Register button:

iOS Apps	Add iOS Devices 💽 🔽
Certificates	
All Pending Development Production	Review and register.
Identifiers App IDs Pass Type IDs Which Park IDs	Confirm the device information is correct. Once this device is registered, you will not be able to edit the UDID and can only edit the name or disable it.
Website rush iDs     ICloud Containers     App Groups     Merchant IDs	Name: Dave's iPod UDID:
Devices	
all =	
Apple TV     Apple Watch     iPad     iPhone     iPod Touch	You can register 99 more of this device type. The maximum number of each device type that you can register per membership year is: Apple TV: 100 Apple Watch: 100 iPad: 100 iPhone: 100 iPod Touch: 100
Provisioning Profiles = All = Development	You may reset your device list at the start of your next membership year.
Distribution	

Repeat the above steps for any iOS device that will be used to test or debug a Xamarin.iOS application.

After adding the device to the developer portal, it is necessary to create a provisioning profile and add the device to it.

## Creating a development provisioning profile

As with the Development Certificate, Provisioning Profiles can be manually created through the <u>Certificates, Identifiers &</u> <u>Profiles</u> section of Apple's Members Center.

Before creating a provisioning profile, an *App ID* must be made. An App ID is a reverse-DNS style string that uniquely identifies an application. The steps below will demonstrate how to create a Wildcard App ID, which can be used to build and install most applications. Explicit App IDs only allow the installation of one application (with the matching bundle ID), and are generally used for certain iOS features such as Apple Pay and HealthKit. For information on creating Explicit App IDs, refer to the <u>Working with Capabilities</u> guide.

### App ID

- In the <u>developer portal</u> browse to the Certificate, Identifiers and Profiles section in the Apple Developer Center. Select App IDs under Identifiers.
- 2. Click the + button and provide a Name:

The App ID string contains two parts separated by a period (.) — an App ID Prefix that is	
defined as your Team ID by default and an App ID Suffix that is defined as a Bundle ID search	
string. Each part of an App ID has different and important uses for your app. Learn More	

Name:	Amy Wildcard	
	You cannot use special characters such as @, &, *, ', *	
App ID Prefix		

3. The App prefix should be preset. Select Wildcard App ID for the app suffix. Enter a Bundle ID in the format



My Apple-ID ist "testbay" with identifier: TACQ98HFC2.com.bay.\*

Wildcard App ID	)	
This allows you to	o use a single App ID to match multiple apps. To create a wildcard App	
ID enter an aster	risk (") as the last digit in the Rundle ID field.	
ID, enter an aster	risk (*) as the last digit in the Bundle ID held.	
ID, enter an aster Bundle ID:	risk (*) as the last digit in the Bundle ID held.	

3. Click the Continue button and following the on screen instructions to create the new App ID.

### **Provisioning profile**

Once the App ID has been created, the Provisioning Profile can be produced. This Provisioning Profile contains information on what app (or apps, if it's a wildcard app ID) this profile relates to, who can use the profile (depending on what developer certificates are added), and what devices can install the app.

To manually create a provisioning profile for development, do this:

- 1. Use Safari to browse to the Apple Developers Member Center, and under the section Certificates, Identifiers & Profiles select Provisioning Profiles.
- 2. Click the + button, in the top right corner to create a new profile.
- 3. From the Development section, select the radio button next to iOS App Development, and press Continue:

Dev	velopment
0	iOS App Development
	Create a provisioning profile to install development apps on test devices.
0	tvOS App Development
	Create a provisioning profile to install development apps on tvOS test devices.



NOV	Select App ID.	
If you plan or want a B provisionin App ID. Wil note that i0	to use services such as Game Center, In-App Purchase, and Push Notifications, undle ID unique to a single app, use an explicit App ID. If you want to create one ig profile for multiple apps or don't need a specific Bundle ID, select a wildcard dcard App IDs use an asterisk (*) as the last digit in the Bundle ID field. Please DS App IDs and Mac App IDs cannot be used interchangeably.	
h pna#lighthoy	App ID: Amy Wildcard (MYBJ8XP7C7.com.xamarin.*)	¢

5. Select the Certificate(s) to include in the provisioning profile, and press Continue:

100	Select certificates.	
elec	t the certificates you wish to include in this provis	sioning profile. To use this profile to
nsta	I an app, the certificate the app was signed with r	must be included.
nsta	II an app, the certificate the app was signed with r	must be included. 2 of 2 item(s) selected
	II an app, the certificate the app was signed with r Select All Amy Burns (IOS Development)	2 of 2 item(s) selected
	II an app, the certificate the app was signed with r Select All Amy Burns (IOS Development) Amy Burns (IOS Development)	2 of 2 item(s) selected

6. Select all the devices that the app will be installed on.

	Add iOS Provisionin	g Profiles 🛛 🛨 💌 🔍
elect Ty	rpe Configure Generate Downlo	d
PRO	Select devices.	
Select this p	t the devices you wish to include in this provisionin rofile on a device, the device must be included.	g profile. To install an app signed with
Select this p	t the devices you wish to include in this provisioning of the device must be included.	g profile. To install an app signed with 5 of 5 item(s) selected
Select this p	t the devices you wish to include in this provisioning profile on a device, the device must be included. Select All Amy's iPhone 6 Mike's 65 Plus	g profile. To install an app signed with 5 of 5 item(s) selected
Select this p	t the devices you wish to include in this provisioning of the device must be included. Select All Amy's iPhone 6 Mike's 6s Plus Craig's iPad	g profile. To install an app signed with 5 of 5 item(s) selected
Select this p	t the devices you wish to include in this provisioning of the device must be included. Select All Amy's iPhone 6 Mike's 6s Plus Craig's iPad Dave's IPod	g profile. To install an app signed with S. of S item(s) selected

7. Provide the Provisioning Profile with an identifiable a name, and press Continue to create the profile:

Select Type Configure	Generate Download
Name th	is profile and generate.
The name you provide wi Profile Name:	Il be used to identify the profile in the portal.
Type:	iOS Development
App ID:	Amy Wildcard (MYBJ8XP7C7.com.xamarin.*)
Certificates:	2 Included
Devices:	5 Included

8. Press Download to download the provisioning profile onto a Mac:

Yo PROV	ur provisioning	profile is ready.		
_				
Download and I Download and do	nstall uble click the followin	ng file to install your Provisi	oning Profile.	
PROV	Name: Amy's Best I Type: IOS Develop App ID: MYBJ8XP7C Expires: Dec 9, 2017	Provisioning Profile ment 7.com.xamarin.* 7		
		Download		R
ble-click on the	file to install the pr	rovisioning profile in Xc	ode. Note that Xcode m	hight not show any visu

### My profile:

"profildez2018.mobileprovision" and lays in downloads on the MAC.

	Provisioning Profiles	Expires	Action
--	-----------------------	---------	--------

After the provisioning profile has been successfully created it may be necessary to refresh Xcode so that all the development certificates are available to Visual Studio for Mac and Visual Studio.

## Downloading profiles and certificates in Xcode

Certificates and provisioning profiles that have been created in the Apple Developer Portal, may not automatically appear in Xcode. Therefore, it may be necessary to download them so they that they can be accessed by Visual Studio for Mac and Visual Studio. To update and download any certificates created in the Apple Developer portal, do the following:

- 1. Quit Visual Studio for Mac or Visual Studio.
- 2. Start Xcode.
- 3. Choose Xcode Menu > Preferences...
- 4. Click the Accounts tab.
- 5. Select a team and click the Download Manual Profiles button:

opte IDs docsarefun@gmail.com	Apple ID	
U docsarefun@gmail.com	Apple ID: docsarefun@gmail.com	n
	Description: docsarefun@gmail.co	m
	Amy Burns	Agent
	Download Manual	Profiles Manage Certificates

6. Quit Xcode.

7. Start Visual Studio for Mac or Visual Studio.

The new certificates or provisioning profiles will be available in Visual Studio for Mac or Visual Studio and ready to use.

Visual Studio for Mac	Visual Studio
<ul> <li>Wichtig</li> <li>It may be necess</li> <li>profiles update</li> </ul>	sary to stop and restart Visual Studio for Mac before it will see any new or modified certificates or d by Xcode.

## Provisioning for application services

Apple provides a selection of special Application Services, also called capabilities, that can be activated for a Xamarin.iOS application. These Application Services must be configured on both the iOS Provisioning Portal when the App ID is created and in the Entitlements.plist file that is part of the Xamarin.iOS application's project. For information on adding Application Services to your app, refer to the <u>Introduction to Capabilities</u> guide and the <u>Working with Entitlements</u> guide.

- Create an App ID with the required app services.
- Create a new provisioning profile that contains this App ID.
- Set Entitlements in the Xamarin.iOS Project

### Deploying to a device

At this point provisioning should be complete, and the app is ready to be deployed to the device. To do this, follow the steps below:

risual stocio for mac	Visual Studio			
() Wichtig				
Before you begi	n, make sure to select Manual Provisioning	g in the Info.plist.		
1. Plug the devi	ce in to a Mac.			
1. Plug the device 2. In the project	ce in to a Mac. 's Info.plist, make sure the Bundle Identifi	fier matches the App	ID (unless the App ID is a	wildcard
1. Plug the devic 2. In the project Identity	ce in to a Mac. 's Info.plist, make sure the Bundle Identifi	fier matches the App	ID (unless the App ID is a	wildcard
1. Plug the devic 2. In the project Identity	ce in to a Mac. 's Info.plist, make sure the Bundle Identifi Application Name:	fier matches the App XWeather	ID (unless the App ID is a	wildcard
1. Plug the devic 2. In the project Identity	ce in to a Mac. 's Info,plist, make sure the Bundle Identifi Application Name: Bundle Identifier:	fier matches the App XWeather com.xamarin.xweathe	ID (unless the App ID is a	wildcard
1. Plug the devic 2. In the project • Identity	ce in to a Mac. 's Info.plist, make sure the Bundle Identifi Application Name: Bundle Identifier: Version:	XWeather com.xamarin.xweathe	ID (unless the App ID is a	wildcard

3. Right-click on the project to view the Project Options dialog and browse to Build > iOS Bundle Signing. From the drop-down list next to both the Signing Identity and Provisioning Profile, verify that Visual Studio for Mac can see the correct profiles, and select a specific identity & profile:

General	iOS Rundle Signing			
Main Settings	Configuration: Debug (Active) Platform: iPhoneSimulator			
Build				
Custom Commands	Signing Identity:	Developer (Automatic)		
Compiler	Provisioning Profile:	Automatic		
Assembly Signing	Custom Entitlements: Custom Resource Rules: Additional Arguments:	iOS Team Provisioning Profile: com.xamarin.*		
🛆 Output		IOS Team Provisioning Profile: *		
Code Analysis		The best dev Profile		
IOS Build		Mike Generic		
iOS Debug		Amy's Best Provisioning Profile		
IOS On-Demand Resources				
IOS Bundle Signing				
I iOS IPA Options				

set in step #2.

4. Make sure to set the build configuration to iPhone / iPad, rather the simulator.

5. Click Run in Visual Studio for Mac and view the app running on the device.

### Summary

This guide covered the steps required to setup the development environment for Xamarin.iOS. It explored how an application is code signed with information about the developer, their team, the devices that an app can run on, and individual app id.

### **Related links**

- Free Provisioning
- App Distribution
- Troubleshooting
- Apple App Distribution Guide

## My Data

To compare and correction possibilities here the screenshots of my data:

Im Apple – Developer (https://developer.apple.com/account/ios/certificate/?teamId=TACQ98HFC2)

	4 Certificates Total				
= All	Name	▲ Туре	Expires		
Pending	Joerg Bayerlein	iOS Distribution	May 26, 2019		
<ul> <li>Development</li> <li>Production</li> </ul>	Joerg Bayerlein	iOS Distribution	Jun 03, 2019		
Keys ■ All	Joerg Bayerlein	iOS Development	Dec 18, 2019		
	Joerg Bayerlein (xamarin's Mac mini)	iOS Development	Jan 08, 2020		
<ul> <li>Identifiers</li> <li>App IDs</li> <li>Pass Type IDs</li> <li>Website Push IDs</li> </ul>	Name: Joerg Bayerlein Type: iOS Development Expires: Jan 08, 2020 Created By: Joerg Bayerlein (testm	ail@joergbayerlein.de)			
iCloud Containers	Revoke Download				

### Identifiers:

D Identifiers	ReuterldentTest		com.fhluebeck.Reuterident		
App IDs	testbay	c	om.bay.*		
<ul> <li>Pass Type IDs</li> <li>Website Push IDs</li> <li>iCloud Containers</li> <li>App Groups</li> </ul>	ID	Name: testbay Prefix: TACQ98HFC2 ID: com.bay.*			
Merchant IDs		Application Services:			
Music IDs		Service	Development	Distribution	
Maps IDs		Access WiFi Information	Disabled	Disabled	
Devices		App Groups	Disabled	Disabled	
e All		Apple Pay Payment Processing	Disabled	Disabled	
Apple TV		Associated Domains	Disabled	Disabled	
Apple Watch		Associated Domains	UISabled	Disabled	
■ iPad		AutoFill Credential Provider	Disabled	Disabled	

### Devices:

Joerg's iPhone	709f70f9c56f1e1502974d96aad9f1e6edef87b0				
	Name: Model: UDID:	Joerg's i iPhone 6 709f70f9	Phone 5 0c56f1e1502974d96	jaa	
	Ed	lit	Disable		

Then I have created a Provisioning Profile and downloaded in Xcode:

Name: profildez2018.mobileprovision

Then you have to load any project on Mac on XCODE and change Bundle identifier, so my ",com.bay.\*", where the asterix is name of your project.

Than do the same in VS on your Win10-machine. There in your iOS- project open Info.plist:



Then:

Anwendung	Visuelle Assets	Funktionen	Erweitert
Anwendungsname	AppBayFinal2018	/2	
Bundle-ID:	com.bay.AppBayFi	nal2018V2	
Version:			
Build:	1.0		
Bereitstellungsziel:			
Hauptschnittstelle:	(nicht festgelegt)		
Geräte	Universal		

Than it had worked.