MODULE [10] SESSION [5] SESSION TITLE: [Connecting Using iTunes]

Sources:

1. [Professional IOS programming] [Chapter 17][9781118661130]

MODULE Objectives

At the end of this module, you will be able to:

- Use iTunes Connect
- Use certificates and profiles
- Explain the difference between development and production certificates and profiles

Session Objectives

At the end of this session, you will be able to:

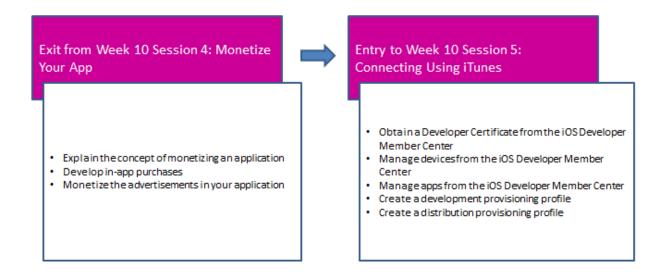
- Obtain a Developer Certificate from the iOS Developer Member Center
- Manage devices from the iOS Developer Member Center
- Manage apps from the iOS Developer Member Center
- Create a development provisioning profile
- Create a distribution provisioning profile

<H1> [Introduction]

Source: [Connecting using iTunes] [Chapter 17]

During the development process you have been able to run your application on the simulator as well as on one of the devices you have connected directly to your Mac. Before you can publish your application to the App Store, however, you need to have it tested by your client or a selection of users.

In this session, you will learn which elements are involved in creating development and distribution provisioning profiles. The Developer Certificate combined with the application identifier, and optionally combined with a series of device identifiers, provide you with a provisioning profile. You need a valid provisioning profile to be able to either build an application for Ad Hoc distribution or for publishing to the App Store. Using Ad Hoc distribution profile you can distribute your application to up to 100 registered Apple devices for testing of your applications beta version.



<H1> [iOS Developer Member Center]

Source: [Connecting using iTunes] [Chapter 17] [482]

Once you have enrolled in an Apple Developer Program, you have access to the Developer Member Center. Visit the *https://developer.apple.com* website and log in with your credentials. After you have successfully logged in, you will see a screen similar to the one shown in **Figure 1**.

The **Certificates, Identifiers & Profiles** link brings you to the place where you can manage your certificates, identifiers, devices, and provisioning profiles. The **iTunes Connect** link opens iTunes Connect, where you can manage your application in the App Store.

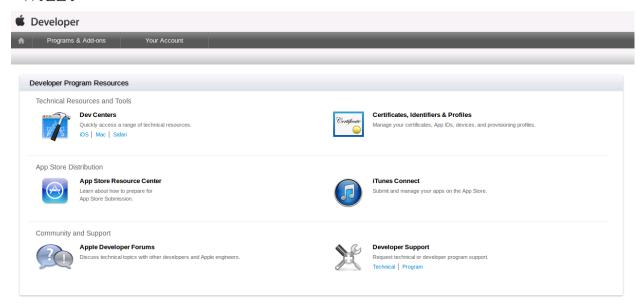


Figure 1: Developer Program Resources Page

<H2> [Obtaining a Developer Certificate]

Source: [Connecting using iTunes] [Chapter 17] [482-486]

Log in to the Member Center, as shown in **Figure 1**, and click the **Certificates, Identifiers & Profiles** link. The output page displays your existing certificates, as shown in **Figure 2**. You can add a new certificate by clicking the **+** button.

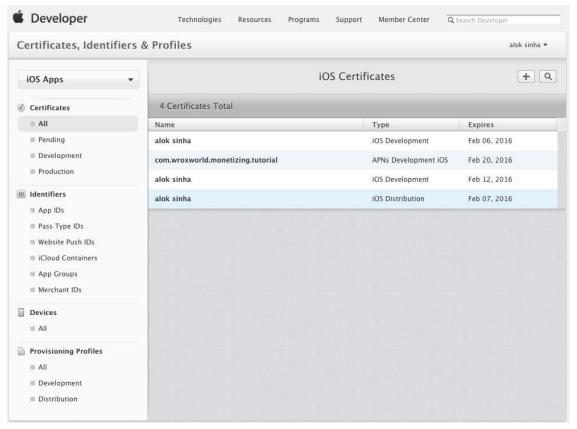


Figure 2: Existing iOS Certificates

When you click the + button, the **Add iOS Certificate** page appears as shown in **Figure 3**. Select the **iOS App Development** option and click **Continue**.

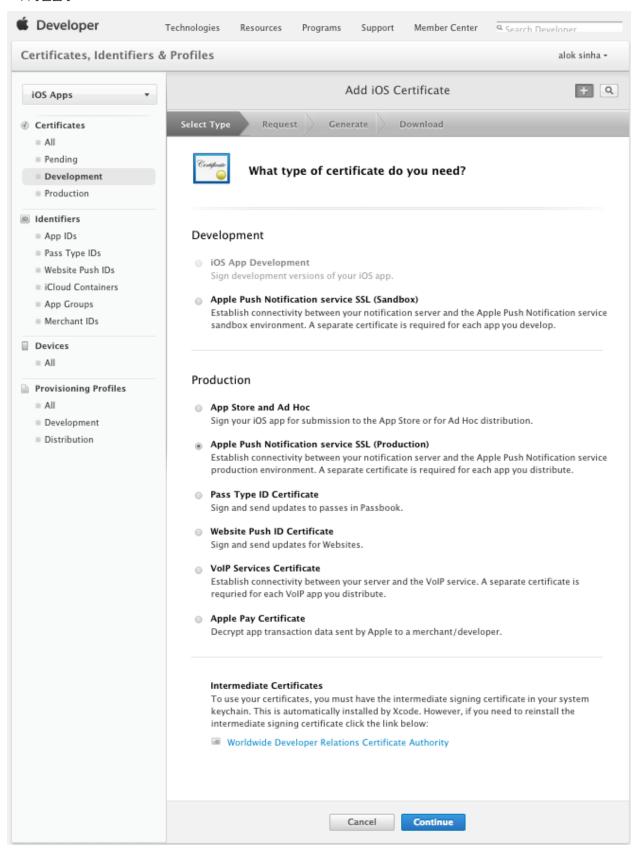


Figure 3: Select iOS App Development

Technical Stuff

To run an application on your device, the device must be connected to your Mac, enabled for development, and recognized by Apple.

Quick Tip

You can run an application on your Apple device by creating a Developer Certificate that identifies you, the application, and the device.

On the next page as shown in **Figure 4**, read the instructions to create the Certificate Signing Request (CSR) file and click **Continue**.

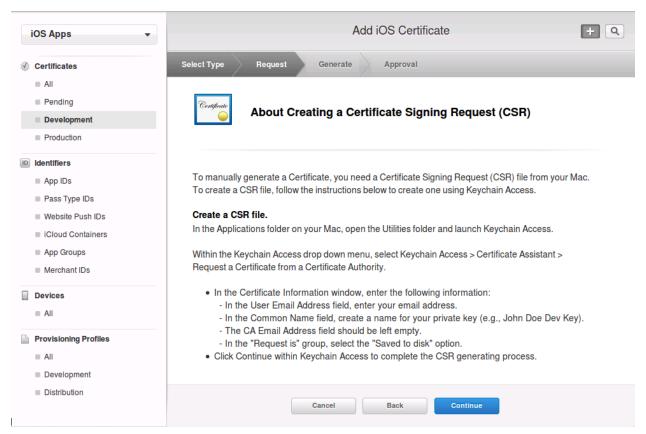


Figure 4: Read CSR Instructions

This will open the **Generate your certificate** page, as shown in **Figure 5**. Here, click the **Choose File** button to upload a CSR file. After uploading the CSR file, click **Generate**.

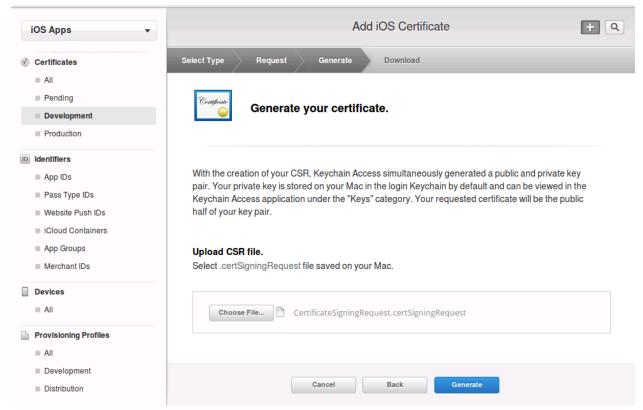


Figure 5: Upload CSR File and Click Generate

Once the certificate is ready, you are notified and can download the certificate, as shown in **Figure 6**. Click the **Download** button to download your Developer Certificate into the **Downloads** folder.

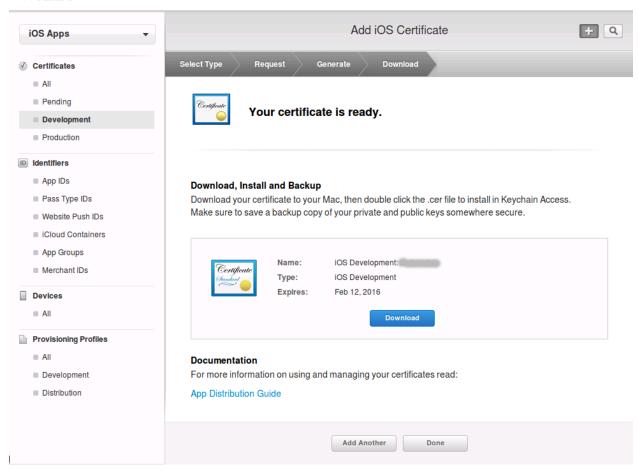


Figure 6: Certificate Ready for Download

Now you can double-click the certificate in **Finder** to install the certificate in your keychain, or you can import the certificate in the Keychain Access application manually using the Import option. You can choose a method depending on how you have secured your Mac and configured your keychain.

<H2> [Managing Devices]

Source: [Connecting using iTunes] [Chapter 17] [486-489]

A device is, as the name implies, a physical device, which can be an iPod Touch, an iPhone, or an iPad. You need to register devices in the developer portal if you want to build Ad Hoc distributions using iTunes Connect.

To find the unique identifier of your device, start Xcode and select **Window** → **Organizer** from the menu. The Library pane on the left lists your devices, and when you click one (for example, your iPhone), you see the details of the device on the right (see **Figure 7**).

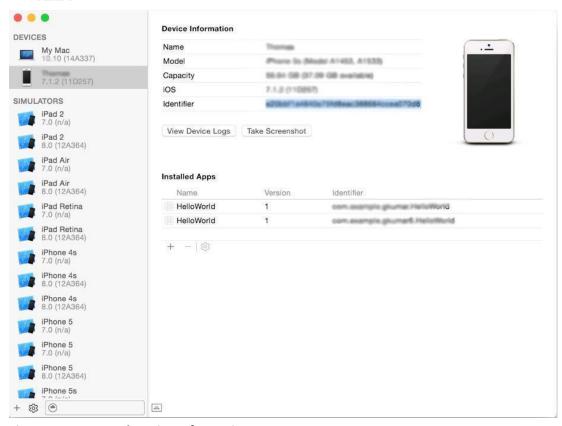


Figure 7: Connected Device Information

If you have already registered some devices under this developer account, you can see them here as shown in **Figure 8**.

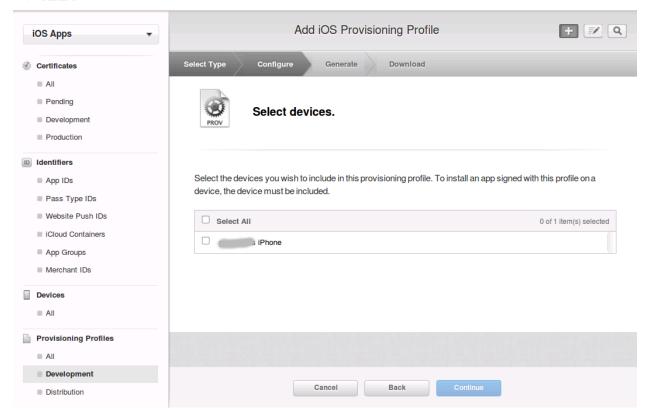


Figure 8: Device Already Registered

Quick Tip

You can register multiple devices simultaneously in your developer account by uploading a file containing the devices you want to register. This will add all the devices in the **Devices** option on the left pane.

Quick Tip

You can register a maximum of 100 devices under a normal developer account. You can disable devices, but you cannot delete them. If the limitation to register 100 devices is a problem, you can contact Apple to purchase space for additional devices.

Additional Knowhow

When Xcode launches, many developers deselect the **Show this window** check box at the bottom-left of the pane. Although the recent list of projects at the right can be useful, both the recent files and the other features in this window here can be accessed just as quickly from the main menu in Xcode.

Real Life Connect

If you have set up Xcode to support on-device testing, you will see that an iOS Team Provisioning Profile is already installed. Xcode works with the Provisioning Portal to create, download, and install this profile automatically when you set up on-device testing.

Exam Check

In your certification examination, you will be required to obtain a Developer Certificate and manage devices in the iOS Developer Member Center.

Knowledge Check 1

Q. No. 862

<H1> [Managing Apps]

Source [Connecting using iTunes] [Chapter 17] [489-495]

When you want to publish your application to the App Store, you need to create an application identifier as a preparation for creating the provisioning profile(s). Two areas in the Member Center are involved in creating your application. You create your application ID and configure it under **Certificates, Identifiers & Profiles**. In the iTunes Connect area, you need to configure the application with its metadata, price, and artwork as it will show in the App Store.

On the **Certificates, Identifiers & Profiles** page (see **Figure 1**), select **App IDs** node under the **Identifiers** section. The right pane will display your registered iOS App IDs, as shown in **Figure 9**.

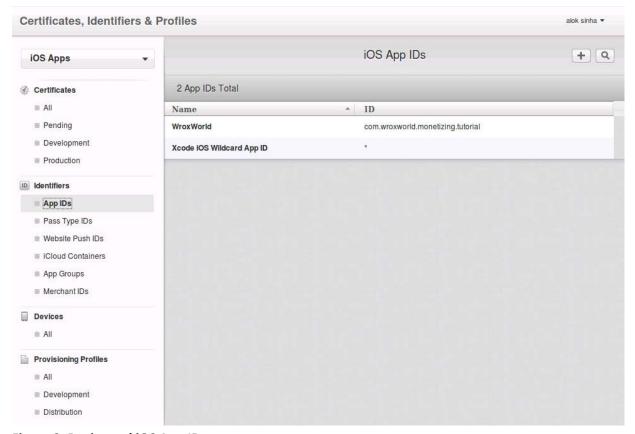


Figure 9: Registered iOS App IDs

Click the + button to create a new application ID. This will display the **Registering an App ID** page to enter your application details, as shown in **Figure 10**.

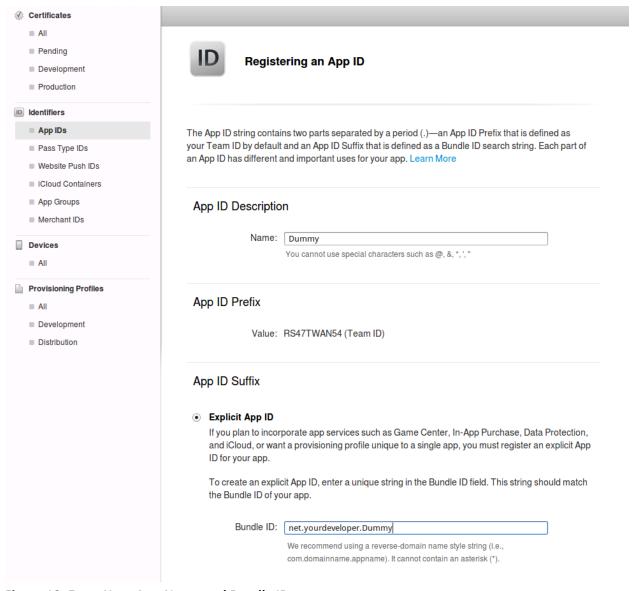


Figure 10: Enter Your App Name and Bundle ID

You need to enter an **App ID Description** (for example, **Dummy**), which is only used internally and is not visible in the App Store. The **App ID Prefix** field presents you with a list of values; normally you would select the one with **(Team ID)** at the end. If you plan to use application services such as Game Center, In-App Purchases, Data Protection, iCloud, Inter-App Audio, Passbook, or Push Notifications, you have to define an Explicit App ID in the **Bundle ID** field. The standard recommendation is to use a reverse-domain name style string like **net.yourdeveloper.Dummy**.

Under the heading **App Services** (see **Figure 11**), select the options that are applicable for your application. In this case this would only be **In-App Purchase**. Finally, click **Continue**.

Enable Services:	App Groups
	Associated Domains
	Data Protection
	Complete Protection
	Protected Unless Open
	 Protected Until First User Authentication
	✓ Game Center
	☐ HealthKit
	■ HomeKit
	Wireless Accessory Configuration
	Apple Pay
	iCloud
	Compatible with Xcode 5
	 Include CloudKit support (requires Xcode 6)
	✓ In-App Purchase Inter-App Audio
	☐ Inter–App Audio ☐ Passbook
	Push Notifications
	■ VPN Configuration & Control
	- VIV Comiguration & Control

Figure 11: Select App Services

This will display a confirmation page that summarizes the application information you have configured, as shown in **Figure 12**. Verify the information and click the **Submit** button to create your application.

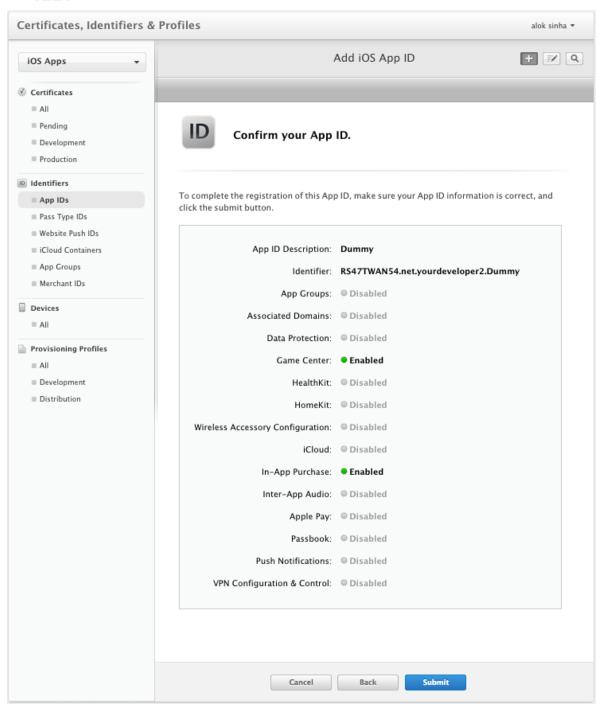


Figure 12: Verify the Application Information and Submit

Once the system has verified all the information you have submitted, it presents a confirmation screen informing you that the registration has completed, as shown in **Figure 13**. Click **Done**.

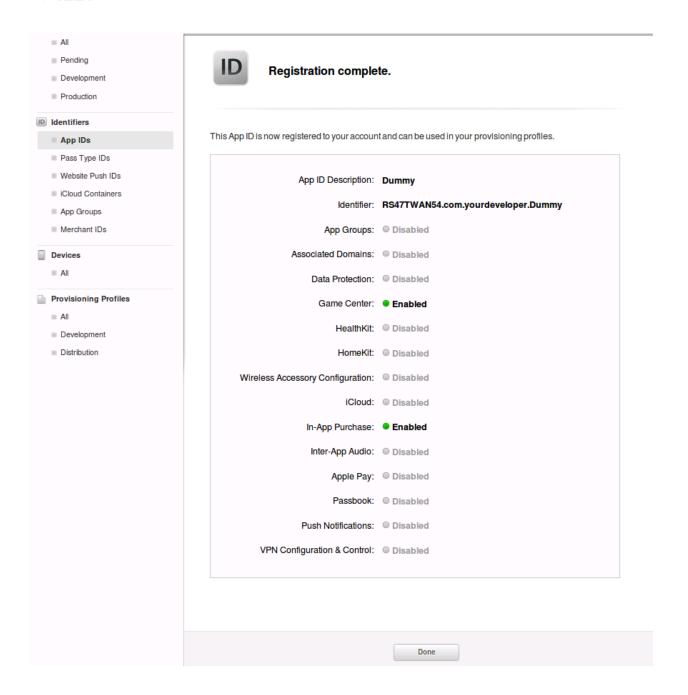


Figure 13: Application Registration Complete

Your application is now registered and you can prepare the submission to the App Store.

Now, go back to the home page of the Member Center and click the **iTunes Connect** link to submit and manage your applications in the App Store. **Figure 14** shows the home page of iTunes Connect.

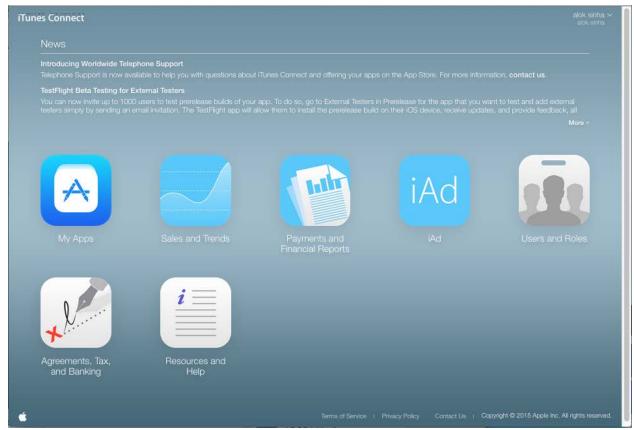


Figure 14: Home page of iTunes Connect

In iTunes Connect you can manage your apps, manage and view your app sales, view payments, and add/invite or delete users who can download your application for testing from iTunes Connect. Being an admin, you can distribute your application for testing among users and provide them roles as either technical, admin, or legal roles. Once you have uploaded your application in iTunes using **My Apps**, you can use the **Sales and Trends** option provided in iTunes Connect to download and view daily, weekly, monthly, and yearly sales of your application. It also provides data in graphs and report forms in detail.

As shown in **Figure 14**, click on the **My Apps** icon. This will present a new page in which all your applications are shown (see **Figure 15**). On this page, click the + button located at the top-left corner of the page to add your new application.

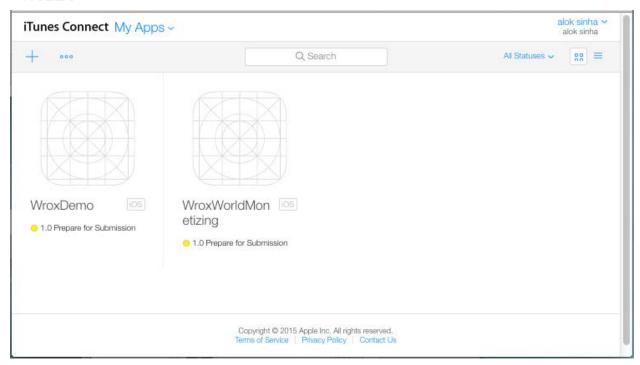


Figure 15: My Apps to Monetize and Add New Apps

On the next page (see **Figure 16**), enter the app information. Enter the app name and select the default language as it will appear in the App Store. From the **Bundle ID** drop-down list, select the Bundle ID you just created (**net.yourdeveloper.Dummy**). The SKU number is an article number for your reference. After entering app details, click **Create**.

Name ?	Version ?		
WroxDemo	1.0		
Primary Language ?	SKU ?		
English	12qwaszx		
Bundle ID ?			
Dummy - com.yourdeveloper.Dummy			
Register a new bundle ID on the Developer Portal.			

Figure 16: Enter New App details

On the next page (see **Figure 17**), select the availability date and price tier for your application. If your application is free, select **Free** from the **Price Tier** drop-down list, otherwise select the price tier you want to apply for this application. A sample configuration is shown in **Figure 17**. Finally, click **Save**.

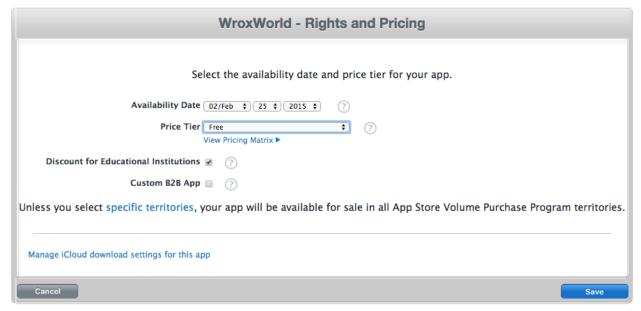


Figure 17: Select the Availability Date and Price Tier

On the next page, you can drag an app video preview and up to 5 screenshots of the app on different devices as shown in **Figure 18**.

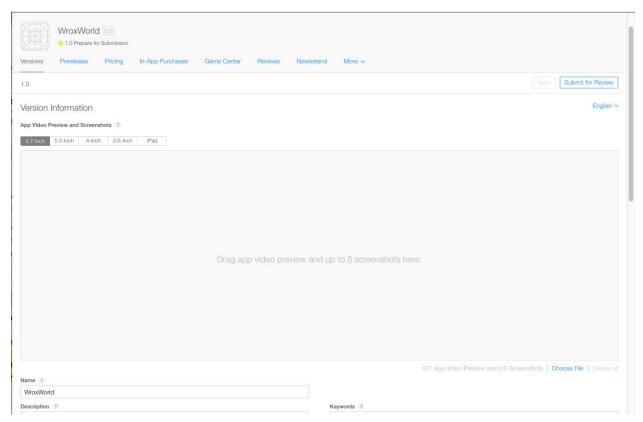


Figure 18: Add App Video Preview and Screenshots

Scroll down and enter the **General App Information** page, as shown in **Figure 19**. Here, choose a file to add your app icon. In the **Version** field, enter the version number of your application. The version number of your application should follow typical software versioning conventions—for example, 1.0 or 1.0.0—and should be equal to the software version you have set in your Xcode project.

Select the **Primary Category** and optionally the **Secondary Category** for this application. If your content is copyrighted, you may provide the copyright details. In the **Copyright** field, enter the current year followed by the name of the person or legal entity that owns the exclusive rights for the application. If you have nothing to do with public transit routing, you can ignore routing app coverage file. Fill all the other credentials of the developer.

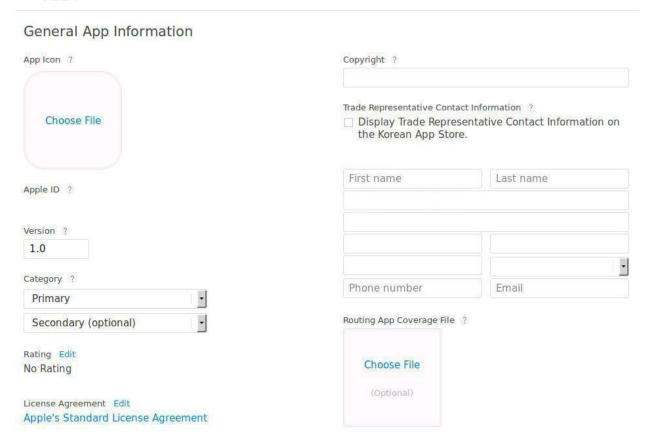


Figure 19: Choose App Icon and Enter Developer Credentials

If you want to specify a rating of your application, then click the **Edit** link in the **Rating** field, as shown in **Figure 19**. This will display the **Edit Rating** page as shown in **Figure 20**. Here, select the level of frequency that best describes your app and click **Done**. If you need more information about rating your application, click the **App Rating Detail** link.

or each content description, select the level of frequency that best describes your app. To learn more about the content description, see the App Rating Detail page. pps must not contain any obscene, pornographic, offensive, or defamatory or materials of any kind (text, raphics, images, photographs, and so on), or other content or materials that in Apple's reasonable judgement may be found objectionable.						
Cartoon or Fantasy Violence	0	0	0			
Realistic Violence	0	0	0			
Prolonged Graphic or Sadistic Realistic Violence	0	0	0			
Profanity or Crude Humor	0	0	0			
Mature/Suggestive Themes	0	0	0			
Horror/Fear Themes	0	0	0			
Medical/Treatment Information	0	0	0			
Alcohol, Tobacco, or Drug Use or References	0	0	0			
Simulated Gambling	0	0	0			
Sexual Content or Nudity	0	0	0			
Graphic Sexual Content and Nudity	0	0	0			
	No	Yes				
Unrestricted Web Access	0	0				
Sambling and Contests	0	0				

Figure 20: Select Rating Options

Now scroll down to the **Build** section. Here, you can download Xcode 5.1.1 or later, or Application loader 3.0 or later to submit your builds, as shown in **Figure 21**.



Figure 21: Download Latest Xcode Version

Finally, scroll back to the top of the page and click the **Submit for Review** button to submit your application for review, as shown in **Figure 22**. Your application status will then be **Prepare for Upload**.

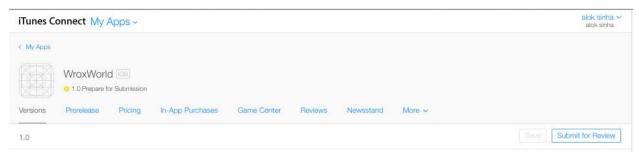


Figure 22: Click Submit for Review

Exam Check

In your certification examination, you will be required to manage your apps in the iOS Developer Member Center.

Knowledge Check 2

Q. No. 884

Quick Tip

Before you provide access to others for testing your application versions, it is important that you test the application on a real device. A lot of functionalities are not available on the simulator, such as dialing a phone number or displaying a UIImagePickerViewController.

Quick Tip

Connecting iTunes with your device is a way to save your data. By this you can sync your device with iTunes i.e. save your data automatically and whenever needed, you can recover your data. Now-a-days you can also implement cloud storage in iTunes to save your data on the cloud.

Real Life Connect

When you run your application on the simulator, its available memory is almost equal to the available memory of your Mac, and the same applies for the available storage capacity. This means that it is almost impossible to hit the hardware boundaries when running an application in the simulator.

<H1> [Creating a Development Provisioning Profile]

Source: [Connecting using iTunes] [Chapter 17] [496-499]

Before you can build and distribute your application, you need to create a provisioning profile. A development provisioning profile is a collection of digital entities that uniquely relates developer(s) and device(s) to an authorized iOS development team and enables the device(s) for testing.

A single device can contain multiple development provisioning profiles. In short, this means that a development provisioning profile is a combination of the following:

- The App ID, which is the unique identifier of the application
- > A certificate or multiple certificates that will be used to code sign the application
- > A device or multiple devices on which the application will be installed

To create a development provisioning profile, click the **Certificates, Identifiers & Profiles** section in the Member Center (see **Figure 23**). On the **Certificates, Identifiers & Profiles** page that opens, select **Development** under the **Provisioning Profiles** node, as shown in **Figure 24**.

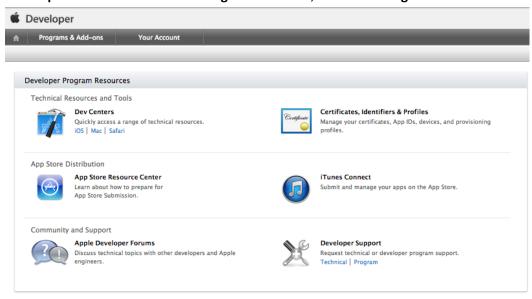


Figure 23: Click on Certificates, Identifiers & Profiles

You will see a list of available iOS provisioning profiles. Click the + button to create a new development provision profile, as shown in **Figure 24**.

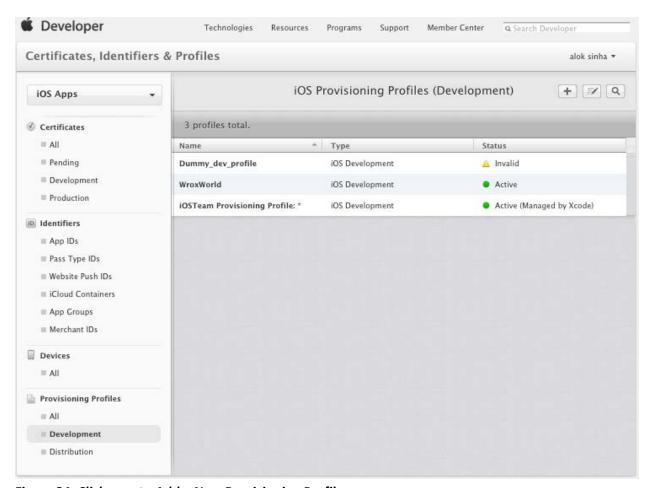


Figure 24: Click on + to Add a New Provisioning Profile

The **Add iOS Provisioning Profile** page appears, as shown in **Figure 25**. Here, select **iOS App Development** and click **Continue**.

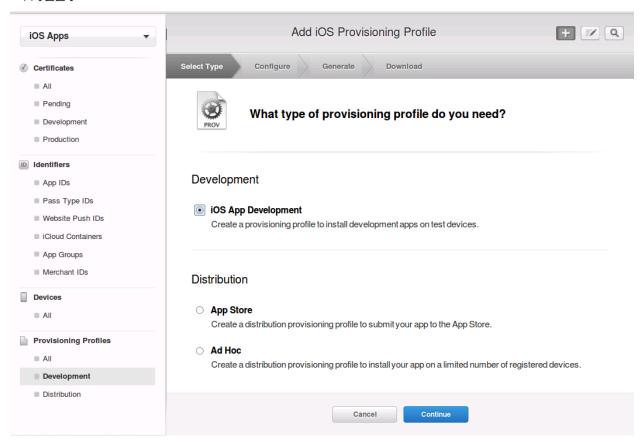


Figure 25: Select the Required Type of Provisioning Profile

On the next screen, select the App ID for which you want to create a provisioning profile from the App ID drop-down list and click **Continue**, as shown in **Figure 26**.

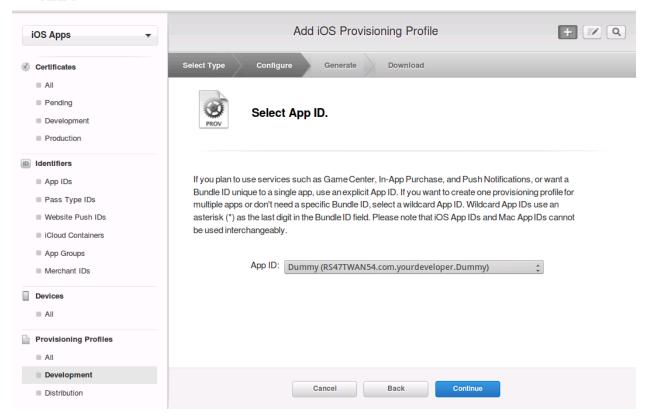


Figure 26: Choose Your App ID

On the next page, select the certificate(s) you want to include in this provisioning profile and click **Continue**, as shown in **Figure 27**.

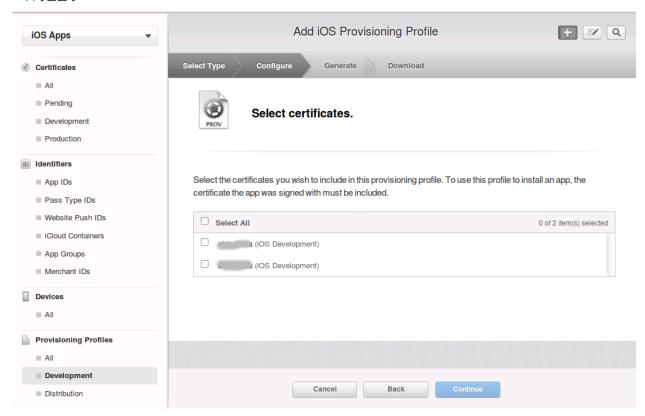


Figure 27: Select the Certificate

Select the device(s) you want to include in this provisioning profile and click **Continue**, as shown in **Figure 28**.

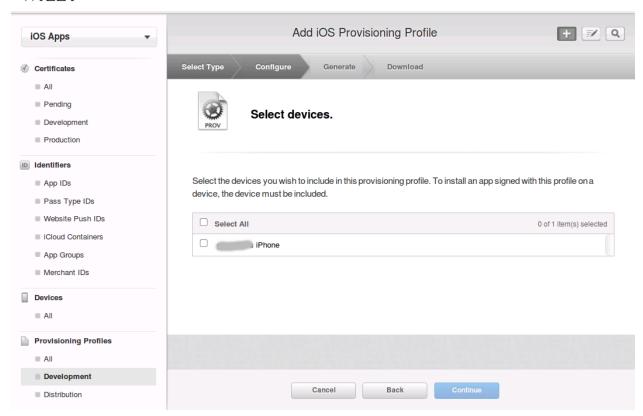


Figure 28: Select the Device

Next, name the provisioning profile (for example, **Dummy_dev_profile**) and generate it. The profile name you enter will be used to identify the profile within the Member Center. Finally, download the provisioning profile, as shown in **Figure 29**.

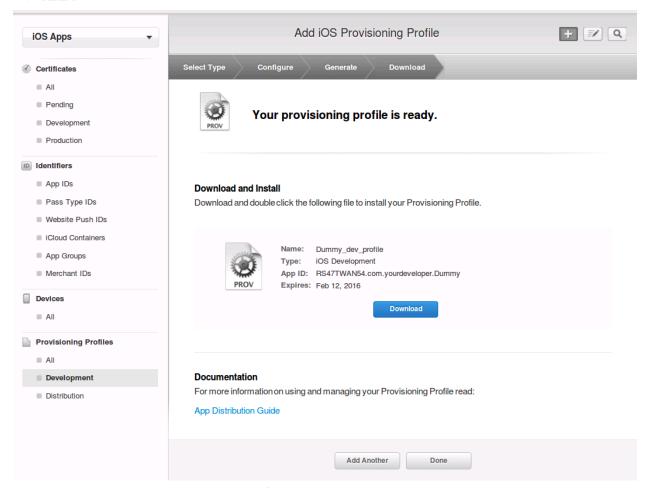


Figure 29: Download the Provisioning Profile

Technical Stuff

A development provisioning profile must be installed on each device on which you want to run your application code. Each provisioning profile contains a collection of iOS Developer Certificates, unique device identifiers, and a unique App ID. If a device is not included in the development provisioning profile, it cannot be used for testing the application.

Quick Tip

In theory, developers should use unadorned screen grabs. In practice, some developers decorate their grabs with extra text or highlights. Similarly, instead of creating a large version of their main app icon, some developers use the 512 x 512 image as an eye-catching splash image. This is not quite playing by the rules, but as long as it is not too blatant, it is usually accepted.

Real Life Connect

Many apps are primarily rejected for four reasons: obvious crashes, unacceptable content, misuse of Apple code, and third-party complaints. Apple is arguably strictest about the third reason. If your app uses unofficial and/or undocumented features in iOS, it will be rejected.

Exam Check

In your certification examination, you will be required to create a development provisioning profile in the iOS Developer Member Center.

Knowledge Check 3

Q. No. 877

<H1> [Creating a Distribution Provisioning Profile]

Source: [Connecting using iTunes] [Chapter 17] [499-502]

The difference between a distribution provisioning profile and a development provisioning profile is that a distribution provisioning profile enables you to distribute the application either to the App Store or by using the Ad Hoc distribution mechanism you can distribute your application to a limited number of (up to 100) registered devices.

<H2> [Creating an Ad Hoc Distribution Provisioning Profile]

An Ad Hoc distribution provisioning profile is used to install your application on a limited number of registered devices; for example, to distribute the application to your client's device for testing and evaluation. The steps you have to follow are almost the same as when creating a development provisioning profile. The only difference is in the selection of the certificate, because now you need to select a production certificate instead of a Developer Certificate.

<H2> [Creating an App Store Distribution Provisioning Profile]

An App Store distribution provisioning profile is required to sign, build, and distribute your application to the App Store. Creating the App Store distribution provisioning profile requires fewer steps than the Ad Hoc creation of the Ad Hoc distribution provisioning profile. Navigate to the **Distribution** link under the **Provisioning Profiles** node, click it, and your distribution profiles will show. Click the + button to bring up the **Add iOS Provisioning Profile** page. Under the **Distribution** header, select **App Store** as shown in **Figure 30**. Then, click **Continue**.

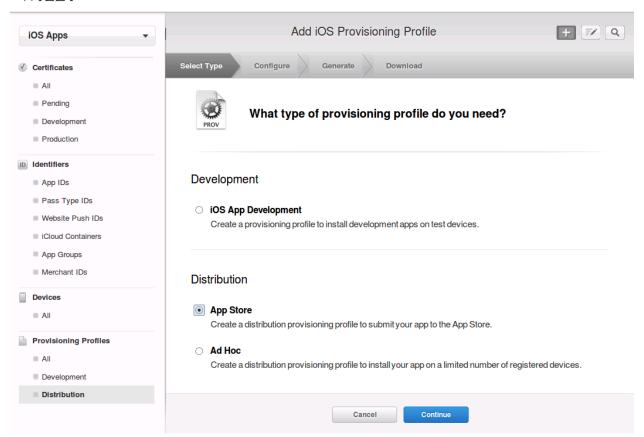


Figure 30: App Store Provisioning Profile

On the next screen (see Figure 31), select the App ID and click Continue.

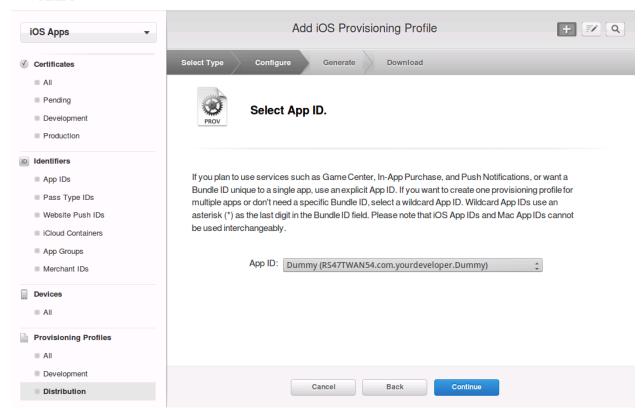


Figure 31: Select Apple ID

On the **Select certificates** page (see **Figure 32**), select the distribution certification you want to include in the provisioning profile you are about to create and click **Continue**.

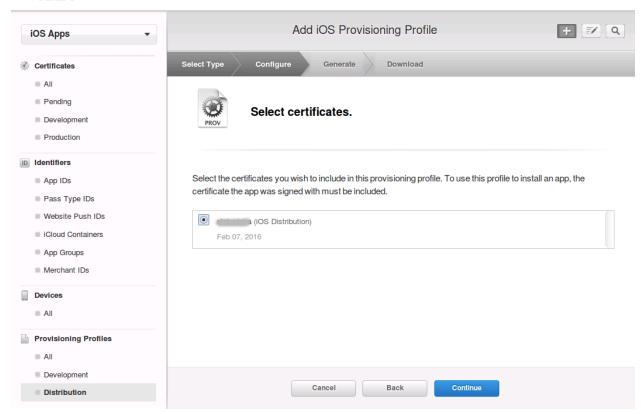


Figure 32: Select the Distribution Profile Certificate

On the next page (see **Figure 33**), enter a profile name and click the **Generate** button.

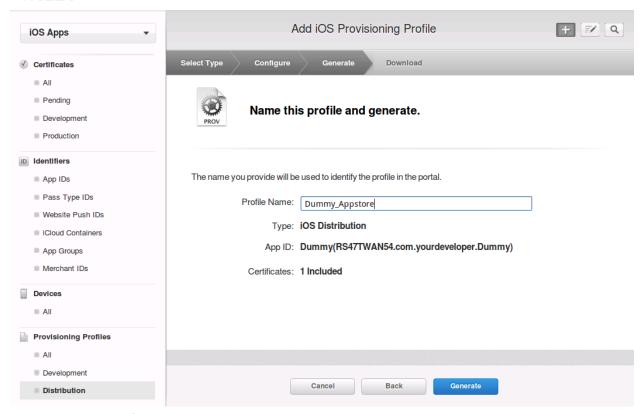


Figure 33: Enter Profile name and Click Generate

The App Store distribution provisioning profile is generated. Once it is ready, you see the page where you can download and install the profile, as shown in **Figure 34**.

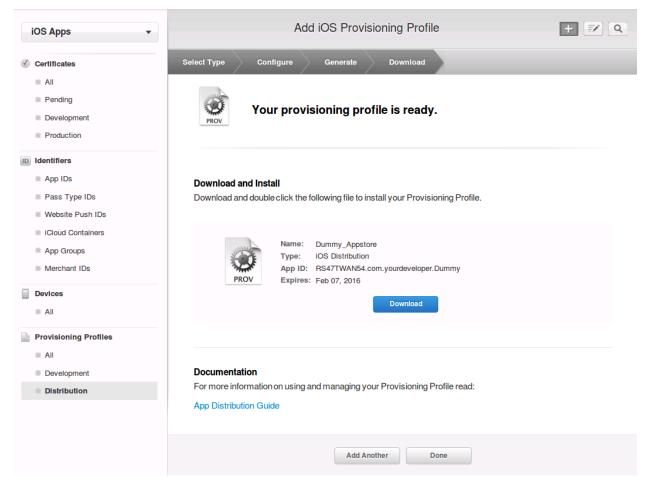


Figure 34: Download the Generated Provisioning Profile

Additional Knowhow

App Purchase is the only mechanism by which an application can allow users to purchase content that is consumed within the application. Therefore, an application cannot use a payment service like PayPal as an alternative to In-App Purchase if the item being purchased is consumed on the device.

Quick Tip

When you want to publish your application to the App Store, you need to create an application identifier as a preparation for creating the provisioning profile(s).

Quick Tip

In iTunes Connect the word "binary" is used to refer to the compiled version of your application. When you see a button labeled **Ready to Upload Binary**, you can read it as "Ready to upload my application to the App Store."

Exam Check

In your certification examination, you will be required to create a distribution provisioning profile in the iOS Developer Member Center.

Knowledge Check 4

- Q. No. 885
- Q. No. 911

Lab Connect

During the lab hour of this session, you will be able to create a Developer Certificate, manage apps in iTunes, and manage users.

Cheat Sheet

- You can access developer member Center only if you have Apple developer account.
- You can manage your certificates, identifiers, devices, and provisioning profiles in the Certificates, Identifiers & Profiles section of the Member Center.
- My Apps in iTunes is used to add and monitor your applications in iTunes Connect.
- You can manage devices using iTunes Connect as technical, admin, or legal roles.
- You can track your application sales using the Sales and Trends service provided by Apple.
- You can use the provisioning profile Ad Hoc service to test your application during the development phase.
- The Developer Certificate optionally combines with series of device identifiers.
- You need a valid provisioning profile to build an application for Ad Hoc distribution or for publishing to the App Store.