彰化縣電腦商業同業公會
iPhone App 應用程式設計進階班

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通知與推播服務

通知與推播服務

- 通知 Notification
  目的都是讓 App 在背景執行時，可以提醒使用者，某些訊息或是某些事件
  - 本機通知(本地) Local Notifications
    透過排程在同一部設備裡分派
  - 推播通知(遠端) Push Notifications
    透過你自己設立的主機傳達到 Apple 的推播通知主機，再送達指定的設備
- 通知中心 Notification Center (NSNotificationCenter Class)
  目的在提供程式內的廣播資訊機制

通知與推播服務

- 對使用者來說，
  兩者看起來像是一樣
  - 顯示 Alert「提示」
    與 Banner「橫幅」
  - App 的 Badge
    「標記圖像」
  - 播放提示聲

通知與推播服務

- 然而實際上對 App 運作來講是不同的。
- App 執行時，AppDelegate

  `application:didReceiveRemoteNotification:`

  `application:didReceiveLocalNotification:`

- App 背景時，AppDelegate

  `application:didFinishLaunchingWithOptions:` 的 Key

  `UIApplicationLaunchOptionsLocalNotificationKey`

  `UIApplicationLaunchOptionsRemoteNotificationKey`

  參考「Local and Push Notification Programming Guide」之
  「 Scheduling, Registering, and Handling Notifications」

Local Notifications

Local Notifications

- UILocalNotification
  - Scheduled time: (fire date)
  - Notification type: alert message, action button, badge number, sound to play
  - Custom data: dictionary

UILocalNotification

建立 UILocalNotification

```
UILocalNotification *localNotif = [[UILocalNotification alloc] init];
```

@property

```
fireDate, timeZone, alertBody, alertAction,
soundName = UILocalNotificationDefaultSoundName
applicationIconBadgeNumber, userInfo
```

通知排程

```
[[UIApplication sharedApplication] scheduleLocalNotification:localNotif];
```

取得排程中的通知

```
NSArray *notificationArray = [[UIApplication sharedApplication]
scheduledLocalNotifications];
UILocalNotification *notif = [notificationArray objectAtIndex:(0..n) ];
```

使用者從提醒小視窗按下，需在 AppDelegate.m 加上

```
- (void)application:(UIApplication *)application didReceiveLocalNotification:
(UILocalNotification *)notif { ... }
```

Push Notifications

Push Notifications

使用時機

- 通常應用在需要主機資料交換的架構。
- 手機沒有與主機連線、在背景執行時。
- 主機端有新的資料發生，需要更新到手機。

優點

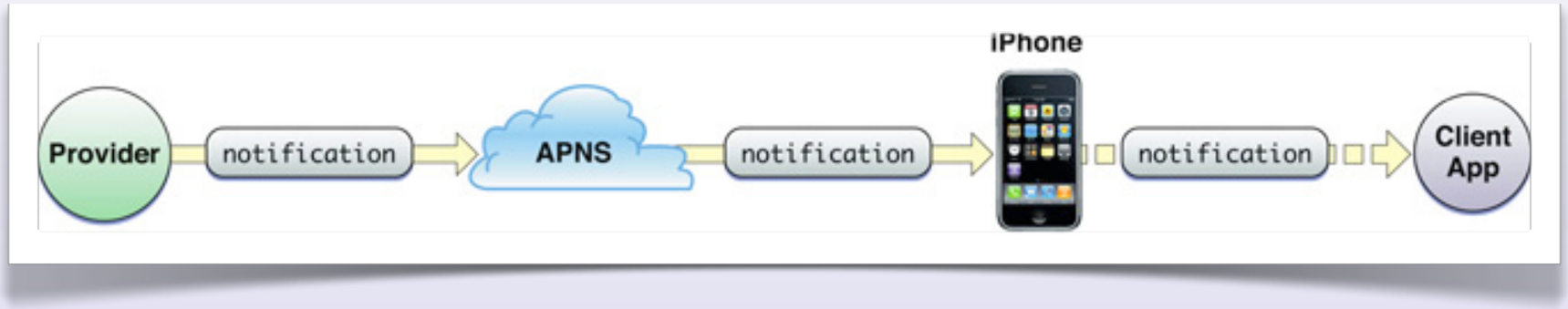
- 不用保持連線。
- 節省手機資源。

Push Notifications

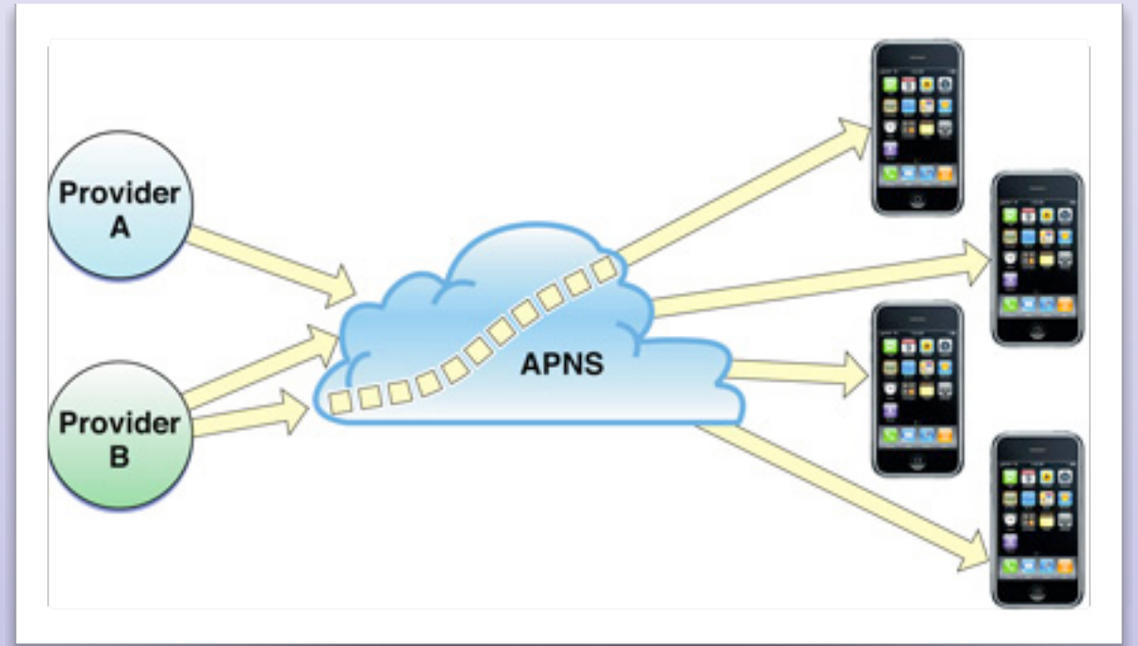
- Apple Push Notification service (APNs) 為中心
- 所有設備需要到 APNs 註冊，取得 device token
- device token 需要儲存於 provider server
- provider server 與 APNs 需要加密認證，
  建立固定管道
- provider server 傳送給 APNs 的訊息：
  device token 與 payload

Push Notification 路徑

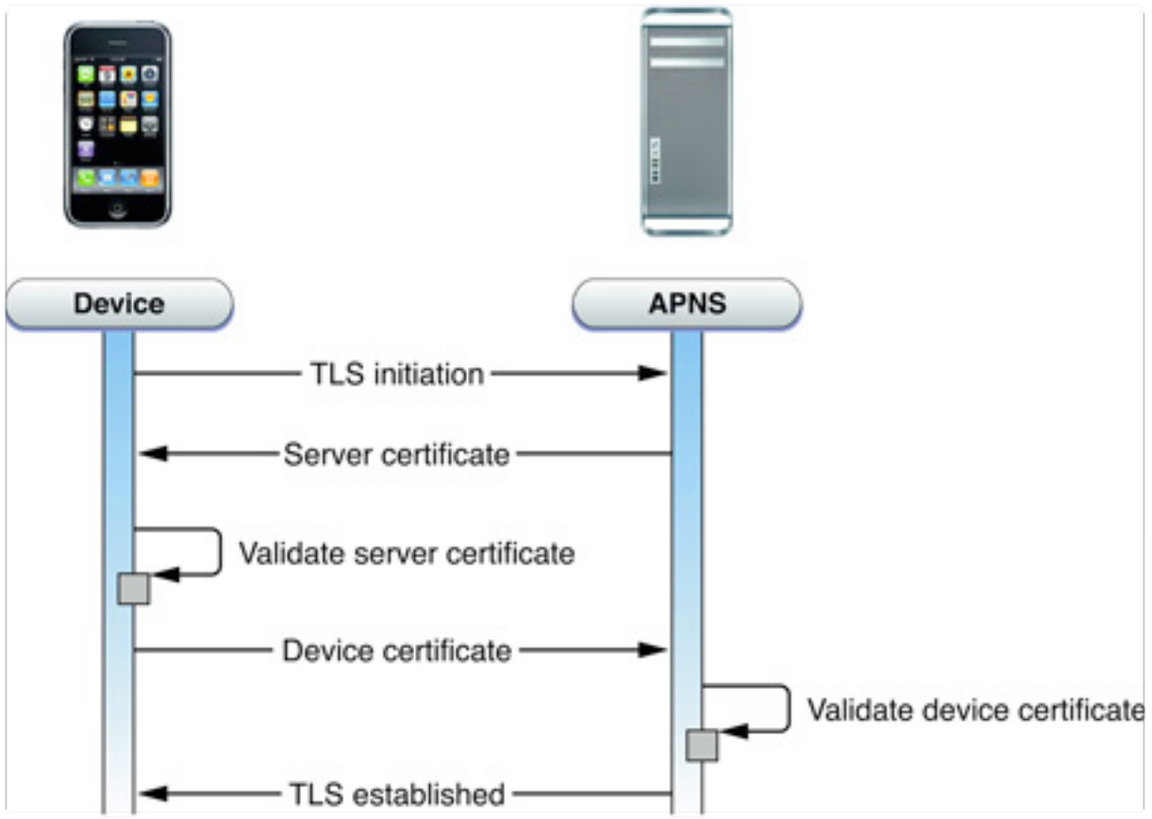
- 從 provider server 傳送訊息到手機



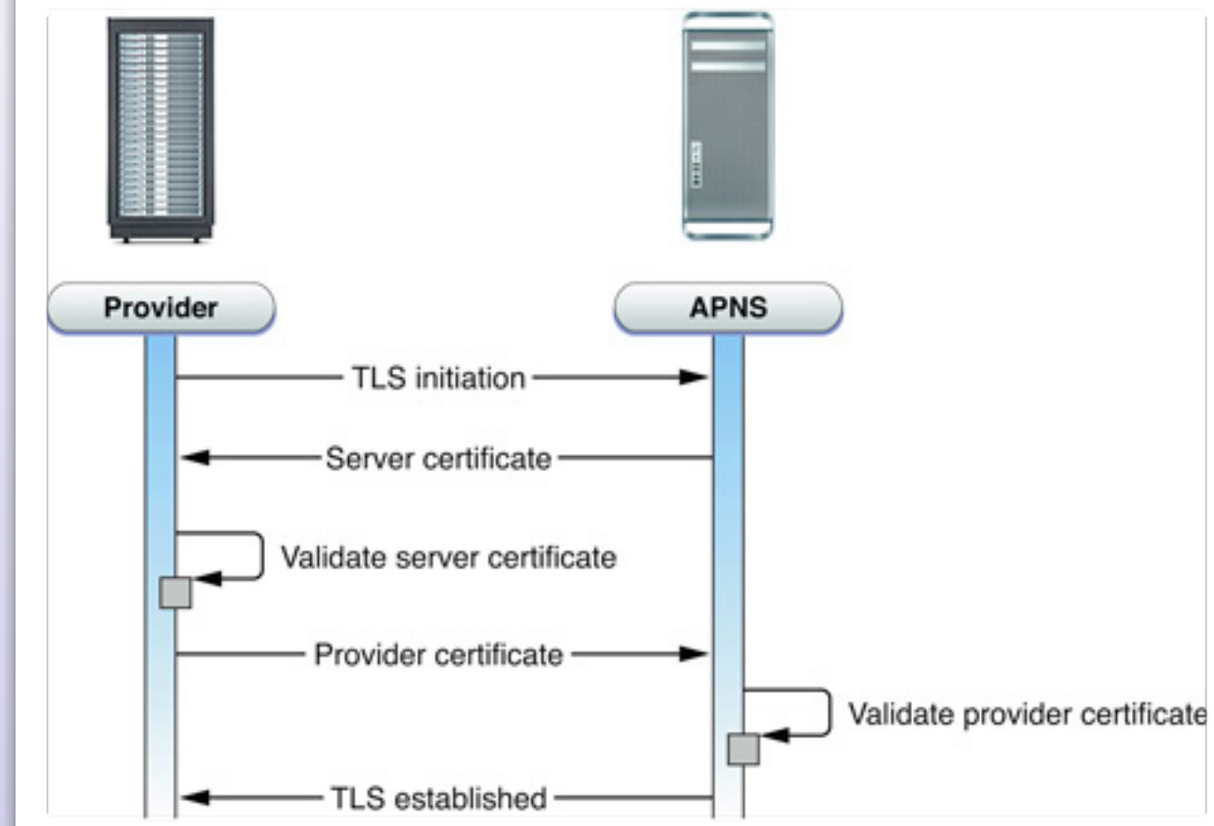
- APNs 的角色



Push Notification 安全機制

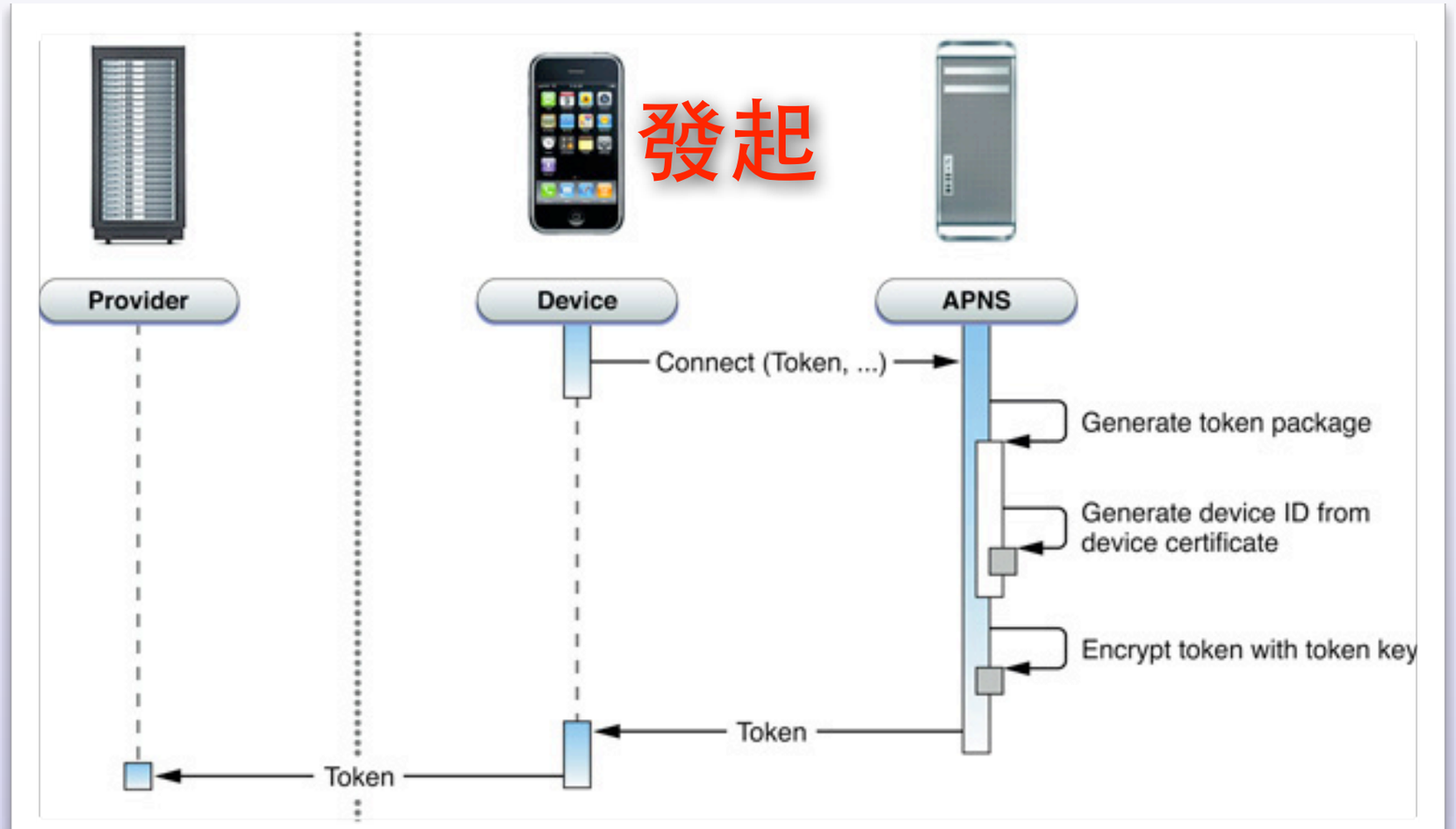


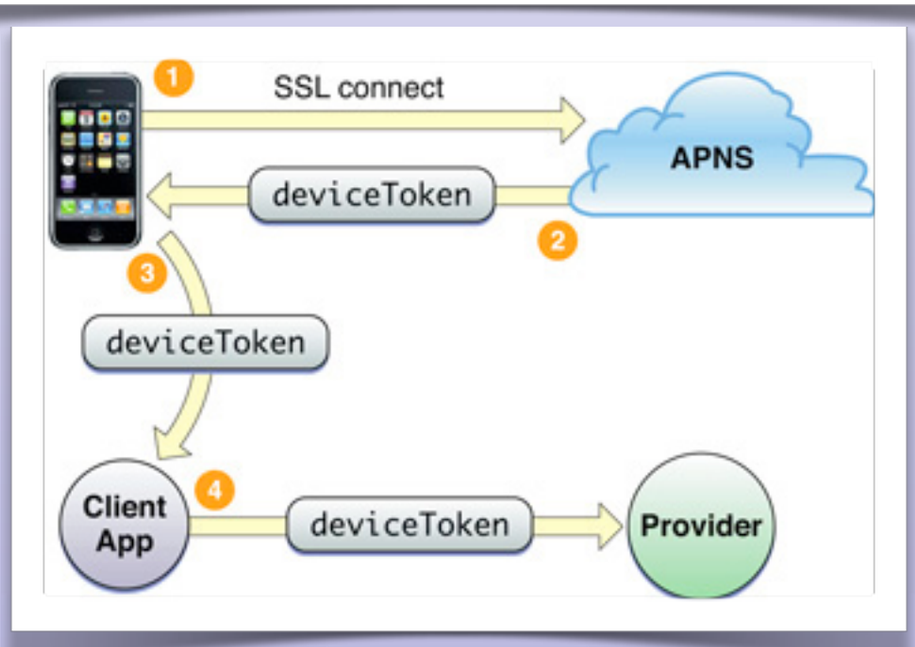
APNs 與手機的信任



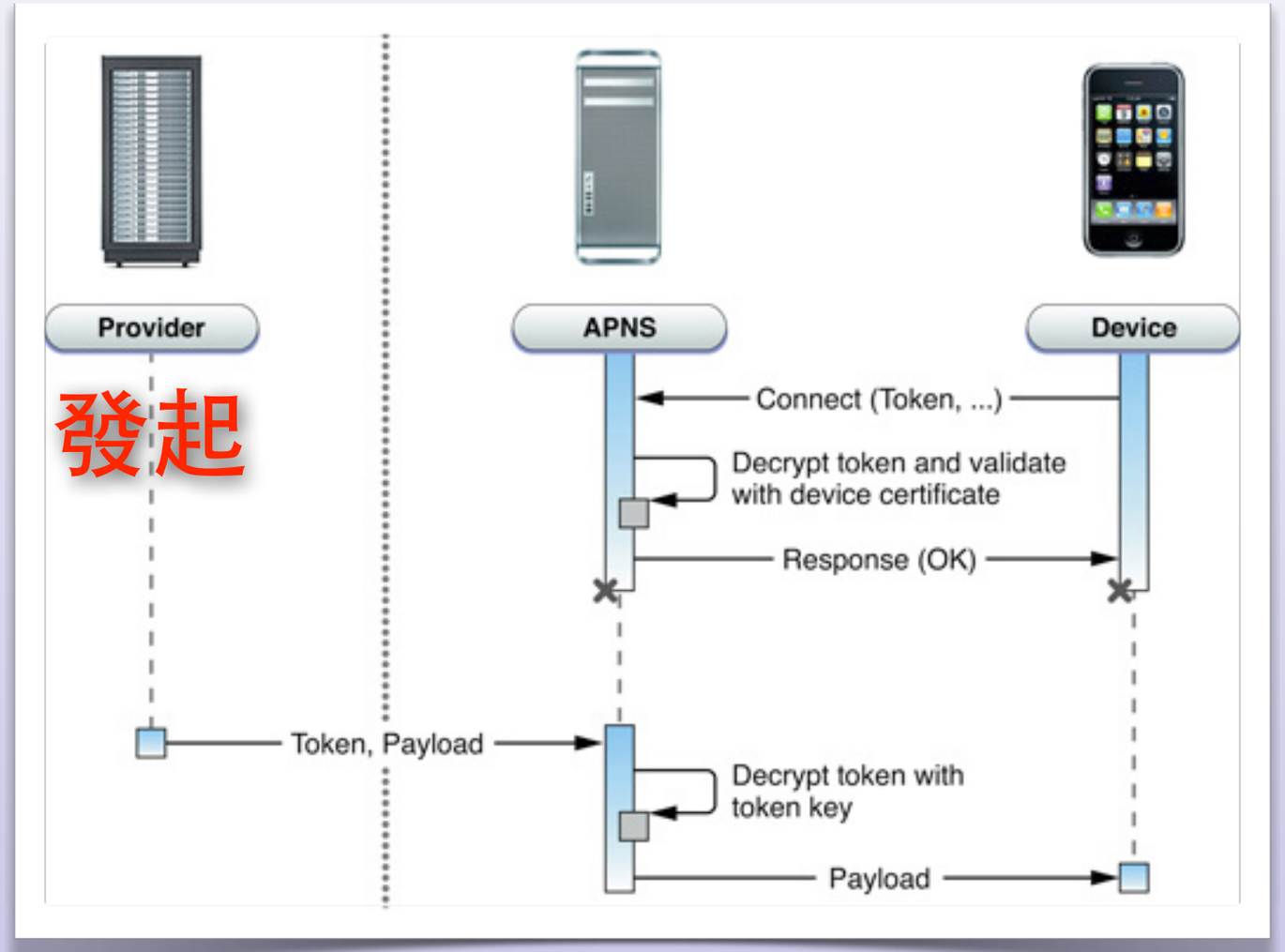
主機與 APNs 的信任

Push Notification Token 產生與發佈





可信任的 Notification 傳遞



Notification Payload

- 裝載如何提醒使用者的資訊與自訂的資料
- 最大容量 256 bytes
- 超過容量會被拒絕傳送
- 以 JSON dictionary object 組成
- 必須有 key:aps 的 dictionary，內容為：
  - alert
  - badge
  - sound

aps dictionary

Key	Value type	Comment
`alert`	string or dictionary	If this property is included, the system displays a standard alert. You may specify a string as the value of `alert` or a dictionary as its value. If you specify a string, it becomes the message text of an alert with two buttons: Close and View. If the user taps View, the application is launched. Alternatively, you can specify a dictionary as the value of `alert`. See Table 3-2 for descriptions of the keys of this dictionary.
`badge`	number	The number to display as the badge of the application icon. If this property is absent, the badge is not changed. To remove the badge, set the value of this property to `0`.
`sound`	string	The name of a sound file in the application bundle. The sound in this file is played as an alert. If the sound file doesn't exist or `default` is specified as the value, the default alert sound is played. The audio must be in one of the audio data formats that are compatible with system sounds; see "Preparing Custom Alert Sounds" for details.

alert property

Key	Value type	Comment
`body`	string	The text of the alert message.
`action-loc-key`	string or `null`	If a string is specified, the system displays an alert with two buttons, whose behavior is described in Table 3-1. The string is used as a key to get a localized string in the current localization to use for the right button's title instead of "View". If the value is `null`, the system displays an alert with a single OK button that simply dismisses the alert when tapped. See "Localized Formatted Strings" for more information.
`loc-key`	string	A key to an alert-message string in a `Localizable.strings` file for the current localization (which is set by the user's language preference). The key string can be formatted with `%@` and `%n$@` specifiers to take the variables specified in `loc-args`. See "Localized Formatted Strings" for more information.
`loc-args`	array of strings	Variable string values to appear in place of the format specifiers in `loc-key`. See "Localized Formatted Strings" for more information.
`launch-image`	string	The filename of an image file in the application bundle; it may include the extension or omit it. The image is used as the launch image when users tap the action button or move the action slider. If this property is not specified, the system either uses the previous snapshot,uses the image identified by the `UILaunchImageFile` key in the application's `Info.plist` file, or falls back to `Default.png`. This property was added in iOS 4.0.

payload 範例

- alert

  "alert" : {

  "loc-key" : "GAME_PLAY_REQUEST_FORMAT",

  "loc-args" : ["Jenna", "Frank"]

  }

- Localizable.strings 內容

  "GAME_PLAY_REQUEST_FORMAT" = "%@ and %@ have invited you to play Monopoly";

- 提醒出現

  “Jenna and Frank have invited you to play Monopoly”

實作練習

SSPush

產生 Provider 使用的證書

- 建立 應用程式 ID，App ID

- 建立 描述檔，Provisioning Profile

注意順序：先產生 App ID，要先啟用 APNS，再產生描述檔

Registering an App ID

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

App ID Description

Name: SSPush

You cannot use special characters such as @, &, *, ', "

App ID Prefix

Value: Z8GB3T9CQ4 (Team ID)

App ID Suffix

Explicit App ID

If you plan to incorporate app services such as Game Center, In-App Purchase, Data Protection, and iCloud, or want a provisioning profile unique to a single app, you must register an explicit App ID for your app.

To create an explicit App ID, enter a unique string in the Bundle ID field. This string should match the Bundle ID of your app.

Bundle ID: com.mit.SSPush

We recommend using a reverse-domain name style string (i.e., com.domainname.appname). It cannot contain an asterisk (*).

Wildcard App ID

This allows you to use a single App ID to match multiple apps. To create a wildcard App ID, enter an asterisk (*) as the last digit in the Bundle ID field.

Bundle ID:

Example: com.domainname.*

App Services

Select the services you would like to enable in your app. You can edit your choices after this App ID has been registered.

Enable Services:

- [ ] Data Protection
  - ( ) Complete Protection
  - ( ) Protected Unless Open
  - ( ) Protected Until First User Authentication
- [x] Game Center
- [ ] iCloud
- [x] In-App Purchase
- [ ] Inter-App Audio
- [ ] Passbook
- [x] Push Notifications

Cancel | Continue

Confirm your App ID.

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

App ID Description:	**SSPush**
Identifier:	**Z8GB3T9CQ4.com.mit.SSPush**
Data Protection:	Disabled
Game Center:	**Enabled**
iCloud:	Disabled
In-App Purchase:	**Enabled**
Inter-App Audio:	Disabled
Passbook:	Disabled
Push Notifications:	**Enabled**

Cancel Back **Submit**

SSPush com.mit.SSPush

ID

Name: SSPush

Prefix: Z8GB3T9CQ4

ID: com.mit.SSPush

Application Services:

Service	Development	Distribution
Data Protection	Disabled	Disabled
Game Center	Enabled	Enabled
iCloud	Disabled	Disabled
In-App Purchase	Enabled	Enabled
Inter-App Audio	Disabled	Disabled
Passbook	Disabled	Disabled
Push Notifications	Configurable	Configurable

Settings

產生憑證

Your certificate is ready.

Download, Install and Backup

Download your certificate to your Mac, then double click the .cer file to install in Keychain Access. Make sure to save a backup copy of your private and public keys somewhere secure.

Name:	Apple Development iOS Push Services: com.mit.SSPush
Type:	APNs Development iOS
Identifier ID:	SSPush
Expires:	?? 13, 2014

Download

Documentation

For more information on using and managing your certificates read:

App Distribution Guide

Add Another | Done

產生憑證

Your certificate is ready.

Download, Install and Backup

Download your certificate to your Mac, then double click the .cer file to install in Keychain Access. Make sure to save a backup copy of your private and public keys somewhere secure.

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Add Another　Done

SSPush com.mit.SSPush

ID

Name: SSPush

Prefix: Z8GB3T9CQ4

ID: com.mit.SSPush

Application Services:

Service	Development	Distribution
Data Protection	Disabled	Disabled
Game Center	Enabled	Enabled
iCloud	Disabled	Disabled
In-App Purchase	Enabled	Enabled
Inter-App Audio	Disabled	Disabled
Passbook	Disabled	Disabled
Push Notifications	Enabled	Configurable

Settings

Apple Development IOS Push Services: com.mit.SSPush
憑證
Stronger Shen
專用密鑰

apns-cert.p12

apns-cert.p12

apns-key.p12

apns-cert.p12

+

apns-key.p12

Provider

建立 Provider 與 APNS 信任

- 開啟 Terminal
- 產生 PEM 格式檔案

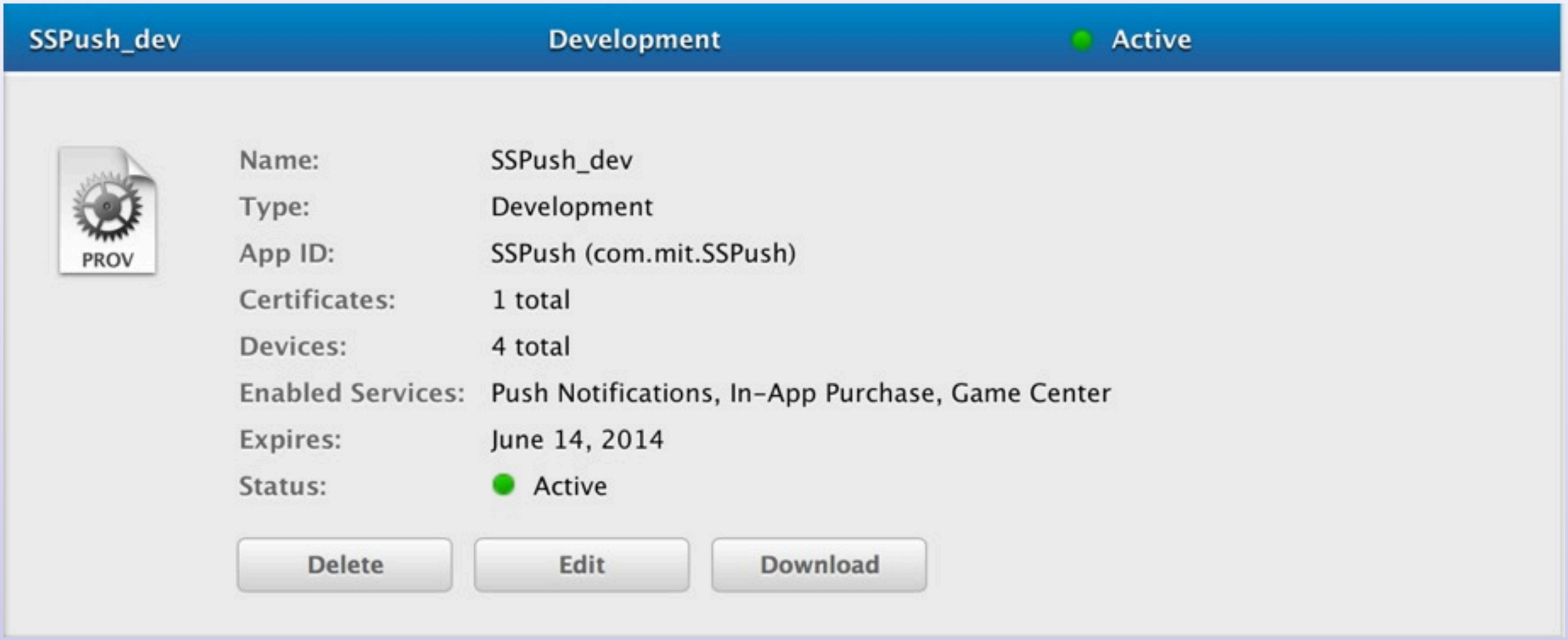
  openssl pkcs12 -clcerts -nokeys -out apns-cert.pem -in apns-cert.p12

  openssl pkcs12 -nocerts -out apns-key.pem -in apns-key.p12

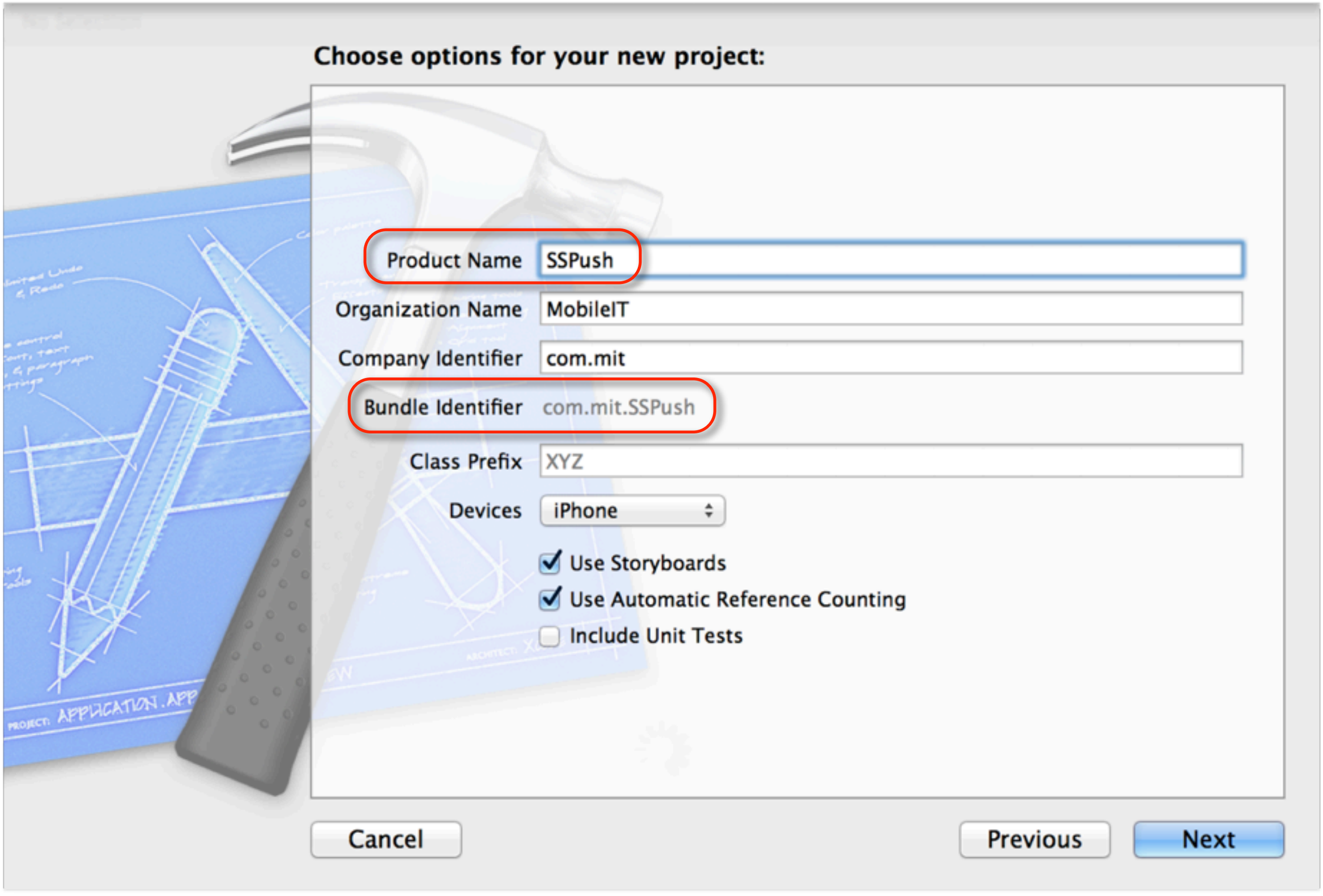
  openssl rsa -in apns-key.pem -out apns-key-noenc.pem
- 合併成發佈用的 PEM 檔案 apns-dev.pem

  cat apns-cert.pem apns-key-noenc.pem > apns-dev.pem
- 試看看可不可連結
  telnet gateway.sandbox.push.apple.com 2195
- 試看看憑證與密鑰可不可連結
  openssl s_client -connect gateway.sandbox.push.apple.com:2195 -cert apns-cert.pem -key apns-key.pem

建立 Provisioning Profile



手機端 iPhone App: SSPush



- 向 APNS 註冊
  application:didFinishLaunchingWithOptions:

```
[[UIApplication sharedApplication]
  registerForRemoteNotificationTypes:
  (UIRemoteNotificationTypeBadge |
   UIRemoteNotificationTypeSound |
   UIRemoteNotificationTypeAlert)];
```

- 取得 device token
  application:didRegisterForRemoteNotificationsWithDeviceToken:

```
NSString* newToken = [deviceToken description];

newToken = [newToken stringByTrimmingCharactersInSet:[NSCharacterSet
characterSetWithCharactersInString:@"<>"]];

newToken = [newToken stringByReplacingOccurrencesOfString:@" "
withString:@""];
```

- -(void)application:(UIApplication *)application didRegisterForRemoteNotificationsWithDeviceToken:(NSData *)deviceToken
  向 **APNS** 註冊成功，回傳 **deviceToken**

- -(void)application:(UIApplication *)application didFailToRegisterForRemoteNotificationsWithError:(NSError *)error
  無法向 **APNS** 註冊

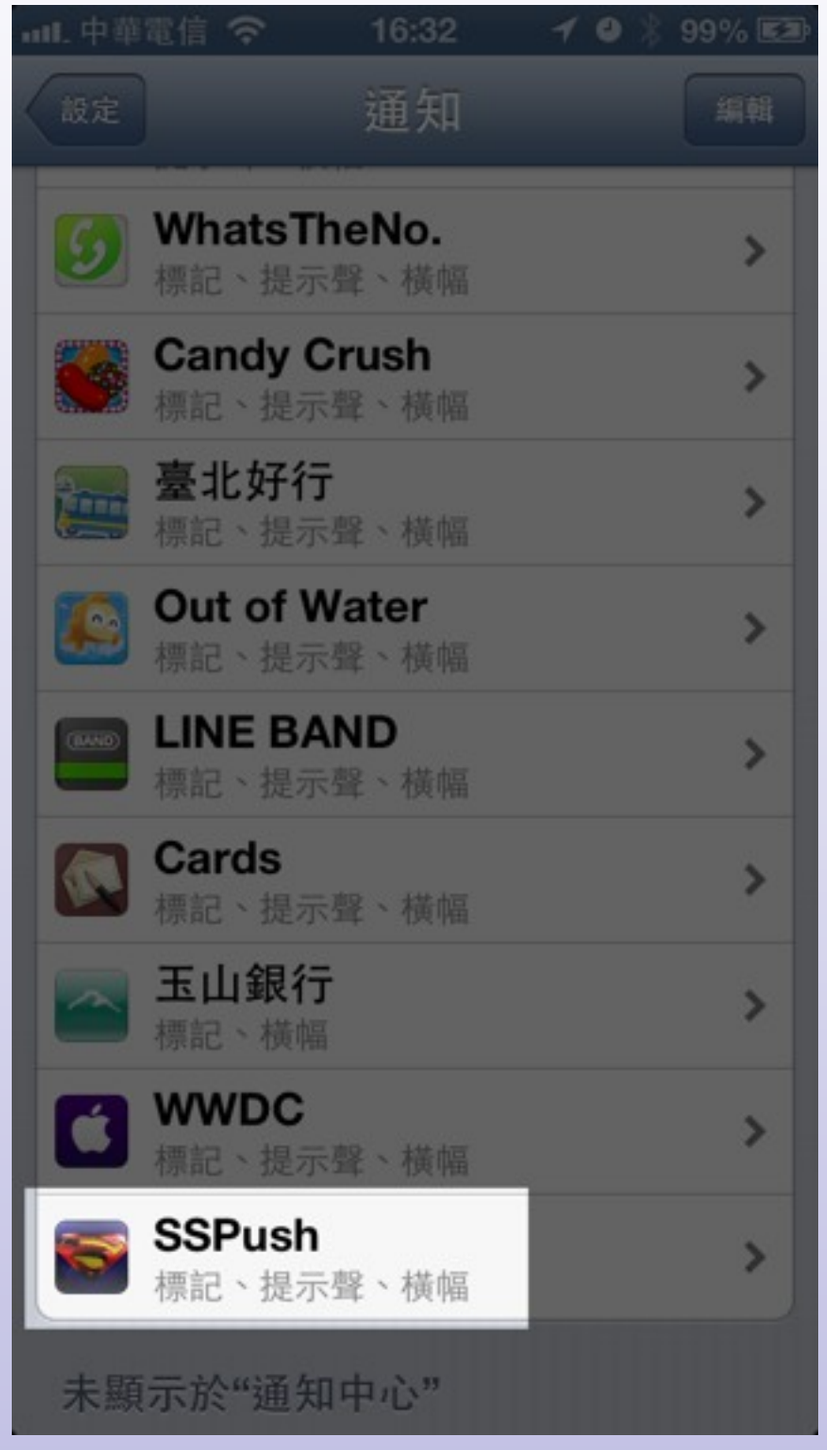
- - (void)application:(UIApplication*)application didReceiveRemoteNotification:(NSDictionary*)userInfo
  App 執行時，收到 remote notification

中華電信
15:30
75%
“SSPush”要傳送推播通知
通知可包含提示、聲音和圖像標記。
可以在“設定”裡進行設定。
不允許
好

SSPush
Stronger Shen push notification!
訊息
行事曆
懷舊日曆
內建工具
設定
照片
iPhoto
Apple Apps
App Store
Passbook
財務工具
錄影
郵件
計算機
書報攤
電話
Webs
每日工具
照相

中華電信
15:31
76%
通知
SSPush
通知中心
顯示
5 個最近項目
提示樣式
無
橫幅
提示
提示需要選擇動作才能繼續。
橫幅將顯示在螢幕上方並會自動消失。
應用程式包含標記圖像
提示聲

中華電信
15:30
75%
“SSPush”要傳送推播通知
通知可包含提示、聲音和圖像標記。
可以在“設定”裡進行設定。
不允許
好


中華電信
16:32
99%
設定
通知
編輯
WhatsTheNo.
標記、提示聲、橫幅
Candy Crush
標記、提示聲、橫幅
臺北好行
標記、提示聲、橫幅
Out of Water
標記、提示聲、橫幅
LINE BAND
標記、提示聲、橫幅
Cards
標記、提示聲、橫幅
玉山銀行
標記、橫幅
WWDC
標記、提示聲、橫幅
SSPush
標記、提示聲、橫幅
未顯示於“通知中心”

中華電信
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76%
通知
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顯示
5 個最近項目
提示樣式
無
橫幅
提示
提示需要選擇動作才能繼續。
橫幅將顯示在螢幕上方並會自動消失。
應用程式包含標記圖像
提示聲

主機端 PHP Provider: SimplePush

- 以 SimplePush.php 檢測
- 加入 apns-dev.pem
- 從 Terminal 執行
  php simplepush.php
- 正常會回應
  Connected to APNS
  Message successfully delivered
- iPhone 收到通知

Notification Center

建立分派表

- 每個 App 程式都會有一組內定通知中心 NSNotificationCenter object，不用額外建立
- 登記觀察分派表方法

```
addObserver:selector:name:object:
```

```
addObserverForName:object:queue:usingBlock:
```

- 從觀察分派表取消方法

```
removeObserver:
```

- 取用與呼叫方法

```
postNotificationName:object:
```

NSNotificationCenter

- 應用在實體類別間的呼叫
- 負責接收的實體類別，先向系統註冊通知
  通常在 - (void)viewDidLoad
```
[[NSNotificationCenter defaultCenter] addObserver:self
selector:@selector(refreshTable:)
name:@"RefreshTableNotification" object:nil];
```
- 加上處理程序於 refreshTable:
```
- (void)refreshTable:(NSNotification *)notification
```
- 記得在實體類別要註銷系統通知。
  通常在 -(void)didReceiveMemoryWarning 與 ~~-(void)viewDidUnLoad~~(iOS 6 不用)
```
[[NSNotificationCenter defaultCenter] removeObserver:self]
```
- 呼叫者只要向系統發出通知即可
```
[[NSNotificationCenter defaultCenter]
postNotificationName:@"RefreshTableNotification" object:nil];
```

	iPhone 5, iPod touch 5 4"	high-resolution iPhone and iPod touch iPhone 4, 4S 3.5"	iPhone and iPod touch 3.5"
	640 x 1136, 326 ppi (320 x 568)	640 x 960, 326 ppi .	320 x 480, 163 ppi .
App icon	114 x 114	114 x 114	57 x 57
App icon for the App Store	1024 x 1024	1024 x 1024	512 x 512
Launch image	640 x 1136	640 x 960	320 x 480
Small icon Spotlight search results Settings	58 x 58	58 x 58	29 x 29
Web clip icon	114 x 114	114 x 114	57 x 57
Toolbar, Navigation bar icon	40 x 40	40 x 40	20 x 20
Tab bar icon	60 x 60	60 x 60	30 x 30
Height of Status Bar	40	40	20
Height of Nav Bar	88	88	44
Height of Tab Bar	98	98	49
Width of Tables	604px / 1100px	604px / 924px	302px / 462px

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