App Provisioning

Dr. Sarah Abraham

University of Texas at Austin
CS329e
Fall 2018
Provisioning Process

✦ The process of creating, testing, and deploying an app
✦ Create app to have desired functionality and assets
  ✦ Programming, art, and design
✦ Test app to ensure features work as expected
  ✦ Quality Assurance (QA)
✦ Meet publisher certification standards to distribute app
  ✦ Identification for developer and application
✦ Certification via external testing
Apple Developer Program

- Program costs $99 per year
- Apple takes 30% of app profits sold on the Store
  - Note that you’re still responsible for sales tax beyond this
- Enroll as Individual or Organization
  - “Organization” must be a legal entity (LLC or corp)
  - For DBA (Doing Business As) or personal development, easier to use “Individual”
Developer Team

✧ Only applies to organizations (not individual accounts)

✧ Additional team members can have different roles and different privileges

✧ Team roles:
  
  ✧ Team agents are legally responsible for the team and handles business aspects
  
  ✧ Team admins handle app and member provisioning and identifiers
  
  ✧ Team members develop in Xcode using their developer certificate
Team Agents

- Only one per account
- Renew Apple membership and create certificates
- Perform actions of other roles
Team Admins

- Invite and assign roles
- Create provisioning profiles
- Add and remove devices
- Create certificates for distribution and push notification services
- Perform actions of Member role
Team Members

- Download provisioning profiles
- Submit certificate signing requests
- Post in forms and submit for technical support
Developer Certificates

- Digital certificates allow development and distribution of iOS apps
  - Required for installing app on development device and submission to the App Store
  - Identifies who signed the app for distribution
  - Request certificates via Xcode or manually
Request Certificate through Xcode

1. Go to Xcode -> Preferences

2. Go to Account, select team, and View Details

3. Click Create for the Signing ID (certificate) you’d like to create

4. Export Developer Profile or Signing ID for development across machines
Apple ID Team information

Signing Identities
Exporting a Developer Account

Exporting a Signing ID
Request Certificate Manually

1. Access online Developer Account
2. Request an iOS App Development certificate
3. Create a CSR (Certificate Signing Request) via Keychain Access
4. Upload the CSR to request a new certificate
Select certificate type

Create CSR
App Identifiers

- A two-part string to identify one or more apps
- String contains the Team ID and a bundle ID
  - A1B2C3D4E5.com.domainname.applicationname
- Explicit IDs match to a single app
- Wildcard IDs match multiple apps
  - Asterisk replaces some or all of the bundle ID
- Xcode 8+ offers automatic signing management!
Adding App IDs

- Necessary if not automatically managed
- Go to Certificates, IDs & Profiles -> Identifiers
- Select App IDs and click Add (+) button
- Enter name and description
Enable App Services

- Explicit and Wildcard IDs have different services available
- Choose necessary services and click Continue, then Register, then Done
Wildcard App Ids

- Only available when not using target capabilities
- iCloud, push notifications, Game Center, wallet, HealthKit etc
- Allows for reuse of provisioning across multiple apps
- Handles iOS/macOS/tvOS/watch in same code sign
Provisioning Profiles

- Provisioning configures an app to launch on devices or use app services
- Provisioning profile is downloaded from developer account and embedded into the app bundle
  - Bundle is code-signed to launch on correct device
- Team provisioning profiles allow apps to be run by all team mates on all devices (works for individuals too)
- Devices registered to create a provisioning profile
• Certificate verifies developer identity

• Signing identity (certificate’s public and private key) code-signs app
Adding a Team Provisioning Profile

- Connect an eligible device
- Choose the team in General Target Settings
- Click “Fix Issues” if necessary
iTunes Connect

- [https://itunesconnect.apple.com/](https://itunesconnect.apple.com/)
- Allows uploading of deployed apps
- Xcode project must be correctly configured
- Uses a Distribution Profile rather than a Development Profile
- Can be tricky to get right!
General Development Process

- Beta testing usually done through Ad Hoc provisioning
- Create app binary with correct settings for distribution
App Store Review Guidelines

- Guidelines that must be met for deployment
  - Safety
  - Performance
  - Business Model
  - Design
  - Legality

What is the signing identity for app distribution?

A. The Team Identifier
B. The Developer Certificate
C. The App Identifier
D. The Provisioning Profile
Further Reading

- All details can be found on Apple’s website:
- Stack Overflow good for addressing troubleshooting and errors (of which there are likely many!)