Distributing Enterprise Apps

Session 705
Dave Rahardja
iOS Software Engineer
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Getting Started
Getting Started

Enterprise account
Getting Started

Enterprise account
No minimum company size
Getting Started

Enterprise account
No minimum company size
D-U-N-S number
Getting Started

Enterprise account
No minimum company size
D-U-N-S number
$299 a year
Getting Started

Agent account
Add Admins and Team Members
Roles
Agent accepts legal terms
Roles

**Agent** accepts legal terms

**Admins** manage team members, prepare apps for distribution
Roles

Agent accepts legal terms
Admins manage team members, prepare apps for distribution
Team members develop and test code
Roles

**Agent** accepts legal terms

**Admins** manage team members, prepare apps for distribution

**Team members** develop and test code
<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>accepts legal terms</td>
</tr>
<tr>
<td>Admins</td>
<td>manage team members, prepare apps for distribution</td>
</tr>
<tr>
<td>Team members</td>
<td>develop and test code</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees or Contractors</td>
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</tbody>
</table>
Admins

Add and remove team members
Create App IDs
Request Push Certificates
Add devices to team development provisioning profile
Manage distribution code signing certificate
Create distribution provisioning profiles
Package apps for distribution
Team Members

Have personal code signing certificates
Use team development provisioning profile to debug
Create Ad-Hoc distributions
Contractors

Contractors are Team Members
Invite them using their email address
Get their own code signing certificate
Remove contractors from team when they leave
Invite Team Member

[Image of Member Center application with a list of team members]

- Annette Fillice - Admin
- Bea Zubiri - Admin
- Brian Iturralde - Admin
- Brooke Embry - Member
- DJ Rice - Member
- Dan Gard - Admin
- Darlene Garcia - Member
- Dave Rahardja - Admin
- Erik Chappins - Admin
- Ivan Liberato - Admin
- Jasmine Guo - Admin
- Josiah Silfer - Member

[Options for actions such as 'Delete']
Invite Team Member
Invite Team Member

Invite People to Your Team

Invite a Person to Your Team
Send an invitation to a colleague requesting they join your development team.

Invite Multiple People to Your Team
Send invitations to a list of colleagues requesting they join your development team.
Invite Team Member

Invite People to Your Team

Invite a Person to Your Team
Send an invitation to a colleague requesting they join your development team.

Invite Multiple People to Your Team
Send invitations to a list of colleagues requesting they join your development team.
Invite Team Member

Invite a Person to Your Team

Contact Information

First Name: Ann
Last Name: Omura
Email Address: ann_omura@icloud.com

Access and Roles
You Have Been Invited to Join an Apple Developer Program

Dear Ann Omura,

Dave+Rahardja has invited you to join their team in the iOS Developer Enterprise Program. As a Program participant, you can access a wealth of development tools and resources. If you have already registered as an Apple Developer and are interested in accepting this invitation, click the invitation code below:

39TK4R9PW8

If you have not registered as an Apple Developer, you will be taken through the registration process after clicking the invitation code above.

Please contact your Team Administrator, Dave+Rahardja with any questions. You have 30 days to respond. After 30 days, your invitation will expire.

Best regards,
Accept Invitation

Join an Apple Developer Program team.

I am a Registered Apple Developer
Sign in with your Registered Apple Developer account to accept your invitation.

Sign in

or

I need to register as an Apple Developer
Register as an Apple Developer to accept your invitation.

Register
Accept Invitation

Join an Apple Developer Program team.

I am a Registered Apple Developer
Sign in with your Registered Apple Developer account to accept your invitation.

or

I need to register as an Apple Developer
Register as an Apple Developer to accept your invitation.
Add Account to Xcode

Enter an Apple ID associated with an Apple Developer Program:
Use of these Apple services is subject to your Apple Developer Program License Agreement.

Apple ID: ann_omura@icloud.com
Password: **********

Join a Program... Cancel Add

No Accounts

Click add (+) button to create a new account
Request Code Signing Certificate
Request Code Signing Certificate
Request Code Signing Certificate
Request Code Signing Certificate
## Approve Code Signing Certificate

In the image, a screenshot from the Apple Developer website is shown, specifically the Certificates, Identifiers & Profiles section. The screenshot displays the iOS Certificates page with a list of certificates. One of the certificates, named Ann Omura, is pending approval. The certificate's details are as follows:

- **Name:** Ann Omura
- **Type:** iOS Development
- **Requested:** May 28, 2014

The screenshot also shows other certificates:

- **Dave Rahardja:** iOS Development, Expires: Jun 26, 2014
- **Dave Rahardja:** iOS Development, Expires: May 28, 2015
- **Apple Inc. - Business Markets Enterprise:** iOS Distribution, Expires: May 27, 2017

There are options to decline or approve the certificate for Ann Omura.
Approve Code Signing Certificate

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Expires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann Omura</td>
<td>iOS Development</td>
<td>Pending Approval</td>
</tr>
<tr>
<td>Dave Rahardja</td>
<td>iOS Development</td>
<td>Jun 26, 2014</td>
</tr>
<tr>
<td>Dave Rahardja</td>
<td>iOS Development</td>
<td>May 28, 2015</td>
</tr>
<tr>
<td>Apple Inc. - Business Markets Enterprise</td>
<td>iOS Distribution</td>
<td>May 27, 2017</td>
</tr>
</tbody>
</table>
Code Signing Certificate
Code Signing Certificate

- **Signatures Identities**: iOS Development - Status: Valid

![Image of Code Signing Certificate](image_url)

Apple Inc. – Business Markets Enterprise

ann_omura@icloud.com
Create App IDs
Create App IDs
Create App IDs

App ID Prefix
Value: TSUS7U846 (Team ID: 6)

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.apple.testgame

  We recommend using a reverse-domain 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:
Create App IDs

Create App ID to begin development
Create App IDs

Create App ID to begin development
Use Team ID prefix
Create App IDs

Create App ID to begin development
Use Team ID prefix
Use explicit App ID
Summary

Enroll in iOS Developer Enterprise Program
Agent and Admins should be employees
Contractors should be Team Members
Invite Team Members
Approve code signing certificate requests
Create App IDs to begin development
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Managing Your Team

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App Distribution Strategy

Custom B2B
Xcode Server

Hub for development
Install OS X Server from Mac App Store
Install Xcode
Enable Xcode service
Setup
Setup

Log in with your Enterprise account

Access
Status: Available on your local network at indah.local
Learn about configuring devices for this service
Permissions: Logged in users can create bots, anyone can view bots

Builds
Perform builds using: Xcode 6.0 (GA179o)
Developer Teams: Apple Inc. - Business Markets Enterprise

Devices
iPod touch
iPod touch (5th generation) / 8.0
Apple Inc. - Business Markets Enter...
Setup
Log in with your Enterprise account
Setup

Server gets own code signing certificate
Users
Create a user for each Admin and Team Member
Users

Create a user for each Admin and Team Member
Users

Create groups

- Contractors
- In-House Developers
- Team Admins
Users

Create access controls
Code Repository
Code Repository

Access

Hosted repositories can be accessed over HTTP and HTTPS.
Hosted repositories can be created by: Logged in users.

Repositories

- **DashAll**
  - https://indah.local/git/DashAll.git
- **RockOnTeam**
  - https://indah.local/git/RockOnTeam.git
- **Scooter**
  - https://indah.local/git/Scooter.git
Code Repository

Git or Subversion
One repository per app
Create access controls
Initial Checkout
Add Server to Xcode
Initial Checkout

Welcome to Xcode
Version 6.0 (6A179o)

Create a new Xcode project
Start building a new iPhone, iPad or Mac application.

Check out an existing project
Start working on something from an SCM repository.

Open Other...
Initial Checkout

Welcome to Xcode
Version 6.0 (6A179o)

Create a new Xcode project
Start building a new iPhone, iPad or Mac application.

Check out an existing project
Start working on something from an SCM repository.

No Recent Projects

Open Other…
Initial Checkout

Choose an item:

<table>
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<tr>
<th>Recents</th>
<th>Favorites</th>
<th>Repositories</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Repository Icon]</td>
<td>DashItAll</td>
<td><a href="https://indah.local/git/DashItAll.git">https://indah.local/git/DashItAll.git</a></td>
</tr>
</tbody>
</table>

Or enter a repository location:

[Cancel] [Previous] [Next]
Bots
Bots

Continuous Integration
Run Unit Tests on connected devices
Reports
Archives
Create Shared Scheme
Create Shared Scheme
Create Shared Scheme

![Image of Xcode window showing shared scheme creation]
Create Shared Scheme
Create Shared Scheme
Create Shared Scheme
Create Shared Scheme

Remember to commit the scheme to the server
Connect Test Devices

Access
Status: Available on your local network at indah.local
Learn about configuring devices for this service
Permissions: Logged in users can create bots, anyone can view bots

Builds
Perform builds using: Xcode 6.0 (6A179c)
Developer Teams: Apple Inc. - Business Markets Enterprise

Devices
- bluesy
  iPhone 5c (Model A1507, A1516, A1528, A1529) / 8.0
- iPod touch
  iPod touch (5th generation) / 8.0

Add to Team
Connect Test Devices

Access
- Status: Available on your local network at indah.local
  Learn about configuring devices for this service
- Permissions: Logged in users can create bots, anyone can view bots

Builds
- Perform builds using: Xcode 6.0 (6A179a)
- Developer Teams: Apple Inc. – Business Markets Enterprise

Devices
- bluesy
  iPhone 5c (Model A1507, A1516, A1526, A1529) / 8.0
- iPod touch
  iPod touch (5th generation) / 8.0

Add to Team
Connect Test Devices

Used for Unit Test
Connect a variety of devices
• iPad
• iPod touch
• iPhone
Development Provisioning Profile automatically updated
Create the Bot
Create the Bot
Create the Bot

Create a new bot for continuous integration:

- **Scheme:** DashitAll Integration
- **Name:** DashitAll Commit Integration
- **Server:** indah
- **Integrate immediately:** checked
Create the Bot
Create the Bot
Create the Bot
Create the Bot
Create the Bot
View Bot Reports
View Bot Report

https://servername/xcode/bots
Bot Output

Test results
Static analysis
Logs
Xcode project archives
Ad-Hoc signed products
Great for QA
Summary

Hub for development
Install OS X server and Xcode
Sign in with Enterprise account
Host code repository
Connect to test devices
Bots for continuous integration
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Distribution Provisioning Profile

What type of provisioning profile do you need?

Development
- iOS App Development
  Create a provisioning profile to install development apps on test devices.

Distribution
- In House
  To sign iOS apps for In House Distribution, you need a Certificate.
- Ad Hoc
  Create a distribution provisioning profile to install your app on a limited number of registered devices.
Distribution Provisioning Profile

What type of provisioning profile do you need?

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- Ad Hoc
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Distribution Provisioning Profile

Add iOS Provisioning Profile

Select App ID.

If you plan to use services such as Game Center, In-App Purchase, and Push Notifications, or want a Bundle ID unique to a single app, use an explicit App ID. If you want to create one provisioning profile for multiple apps or don’t need a specific Bundle ID, select a wildcard App ID. Wildcard App IDs use an asterisk (*) as the last digit in the Bundle ID field. Please note that iOS App IDs and Mac App IDs cannot be used interchangeably.

App ID: Dash it All(TZUQ6dH23.com.apple.dev.dashitall)
Distribution Provisioning Profile

Select App ID.

If you plan to use services such as Game Center, In-App Purchase, and Push Notifications, or want a Bundle ID unique to a single app, use an explicit App ID. If you want to create one provisioning profile for multiple apps or don't need a specific Bundle ID, select a wildcard App ID. Wildcard App IDs use an asterisk (*) as the last digit in the Bundle ID field. Please note that iOS App IDs and Mac App IDs cannot be used interchangeably.

App ID: dash-it-all(TZUQH1H23.com.appledev.dashitall)
Packaging for Distribution
Packaging for Distribution
Packaging for Distribution
Packaging for Distribution
Packaging for Distribution

Select the method of distribution:

- **Submit to the iOS App Store**
  Sign, package and submit application to the iOS App Store.

- **Save for Enterprise or Ad Hoc Deployment**
  Sign and package application for distribution outside of the iOS.

- **Export as Xcode**
  Export the entire Xcode archive of this application.
Packaging for Distribution

Select the method of distribution:

- **Submit to the iOS App Store**
  Sign, package and submit application to the iOS App Store.

- **Save for Enterprise or Ad Hoc Deployment**
  Sign and package application for distribution outside of the iOS.

- **Export as Xcode**
  Export the entire Xcode archive of this application.
Packaging for Distribution
Packaging for Distribution
Packaging for Distribution
Packaging for Distribution

![Image of packaging settings](image)
Code Signing and Provisioning Profiles
Code Signing and Provisioning Profiles

Code Signing Certificates
• Valid for **three** years
• Up to two valid certs at a time
• Update app binary to renew
Code Signing and Provisioning Profiles

Code Signing Certificates
• Valid for three years
• Up to two valid certs at a time
• Update app binary to renew

Provisioning Profiles
• Valid for one year
• Renew at any time
• No need to update app binary
• Update over MDM
Code Signing and Provisioning Profiles

Code Signing Certificates
• Valid for three years
• Up to two valid certs at a time
• Update app binary to renew

Provisioning Profiles
• Valid for one year
• Renew at any time
• No need to update app binary
• Update over MDM

Enterprise Apps need valid code signing and provisioning profile to run
Code Signing and Provisioning Profile
Code Signing and Provisioning Profile

App A 1.0
Code Signing and Provisioning Profile

App A 1.0

Code Signing Certificate
## Code Signing and Provisioning Profile

<table>
<thead>
<tr>
<th>App A 1.0</th>
<th>Code Signing Certificate</th>
<th>Provisioning A</th>
</tr>
</thead>
</table>


Code Signing and Provisioning Profile

- App A 1.0
- Code Signing Certificate
- Provisioning A
Code Signing and Provisioning Profile

- App A 1.0
- Code Signing Certificate
- Provisioning A
- Provisioning A
Code Signing and Provisioning Profile

- App A 1.0
- Code Signing Certificate
- Provisioning A
- Provisioning A
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
- Provisioning A
Code Signing and Provisioning Profile
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
  - Provisioning A
  - Provisioning A
  - Provisioning A
Code Signing and Provisioning Profile

App A 1.0

App A 2.0

Code Signing Certificate

Provisioning A
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
Code Signing and Provisioning Profile

- Code Signing Certificate
- Provisioning A
- App B 1.0
- App A 1.0
- App A 2.0
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
- App B 1.0
- New Code Signing Certificate
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
- App B 1.0
- New Code Signing Certificate
- Provisioning B
Code Signing and Provisioning Profile

- Code Signing Certificate
- Provisioning A
- App A 1.0
- App A 2.0
- New Code Signing Certificate
- Provisioning B
- App B 1.0
Code Signing and Provisioning Profile

- Code Signing Certificate
- Provisioning A
  - App A 1.0
  - App A 2.0
- ?
- New Code Signing Certificate
  - App B 1.0
  - Provisioning B
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- Code Signing Certificate
- Provisioning A
- App B 1.0
- New Code Signing Certificate
- Provisioning B
Code Signing and Provisioning Profile

- App A 1.0
- App A 2.0
- App A 2.1

Provisioning A

- App B 1.0

New Code Signing Certificate

Provisioning B
Best Practices

- Notice code signing expiration date
- Use newest code signing certificate
- Embed a new provisioning profile
- Host in-house apps using HTTPS
- Use MDM to distribute apps and refresh provisioning profiles
- App must be updated to change code signing certificate
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Custom B2B

Hosted in the App Store
Visible to limited audience
Reviewed by Apple
No provisioning profiles needed
Publishing Custom B2B

App Store Developer
Use iTunes Connect
Check “Custom B2B”
Publishing Custom B2B

App Store Developer
Use iTunes Connect
Check “Custom B2B”
Publishing Custom B2B

Specify customer Apple IDs

For a custom B2B app, you must enter at least one Apple ID that was created for use with the Volume Purchase Program (the Apple ID is usually an email address). This app will only be available to the Volume Purchase Program Apple IDs you specify here (you can add as many as you would like). To learn more about the App Store Volume Purchase Program for Business, visit [http://vpp.itunes.apple.com/faq](http://vpp.itunes.apple.com/faq). To learn more about how your customers can sign up for the Volume Purchase Program, visit [http://enroll.vpp.itunes.apple.com](http://enroll.vpp.itunes.apple.com).

Unless you select specific stores, your app will be for sale in all App Store Volume Purchase Programs for Business worldwide.
Publishing Custom B2B

Specify customer Apple IDs
Purchasing Custom B2B

VPP Portal
Purchase licenses
Push using MDM
Custom B2B

Great for custom apps if you don’t own the code
Great for subsidiaries
Hosted by Apple
No code signing or provisioning profile expiration
Promo codes for beta testing
Managing Your Team

Xcode Server

App Distribution Strategy

Custom B2B
Agents and Admins should be employees
Contractors should be Team Members
Use Xcode Server for continuous integration
Keep an eye on code signing certificate expiration
Use Custom B2B if you don’t own the code
Reinvent your enterprise with iOS.

iOS 8 is more advanced than ever for every line of business. Get the latest content from WWDC14 geared to IT and enterprise developers. Learn about key technologies in iOS including how to deploy devices, secure corporate data, and build breakthrough custom apps.
More Information

Paul Danbold
Core OS Technologies Evangelist
danbold@apple.com

Documentation
iOS Developer Program
http://developer.apple.com/enterprise

Apple Developer Forums
http://devforums.apple.com
# Related Sessions

<table>
<thead>
<tr>
<th>Session</th>
<th>Location</th>
<th>Time</th>
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<tbody>
<tr>
<td>Managing Apple Devices</td>
<td>Pacific Heights</td>
<td>Tuesday 9:00AM</td>
</tr>
<tr>
<td>Building Apps for Enterprise and Education</td>
<td>Pacific Heights</td>
<td>Tuesday 10:15AM</td>
</tr>
<tr>
<td>Labs</td>
<td>Core OS Lab A</td>
<td>Wednesday 2:00PM</td>
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<tr>
<td>Developing Apps for Enterprise and Education</td>
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</tr>
<tr>
<td>Managing Apple Devices</td>
<td>Core OS Lab B</td>
<td>Thursday 9:00AM</td>
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