

# Using Store Kit for In-App Purchases

Session 305

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Manager, iOS Media Apps and Stores

These are confidential sessions—please refrain from streaming, blogging, or taking pictures



96%

of 25 top grossing iPhone apps  
use in-app purchases

# Agenda

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What's new in Store Kit

Implementing in-app purchases

Using the test environment

Tips for passing app review

# What's New in Store Kit

# Store Kit Is a Payment System

- Manages transactions for in-app purchases
- Provides a transaction receipt
- Security comes from the receipt





**Security Is in the Receipt**

# Related Sessions

Using Receipts to Protect Your Digital Sales

Presidio  
Thursday 2:00PM



# Evolution of the Receipt

# Evolution of the Receipt

In-App Purchase 1

In-App Purchase 2

In-App Purchase 3

# Evolution of the Receipt

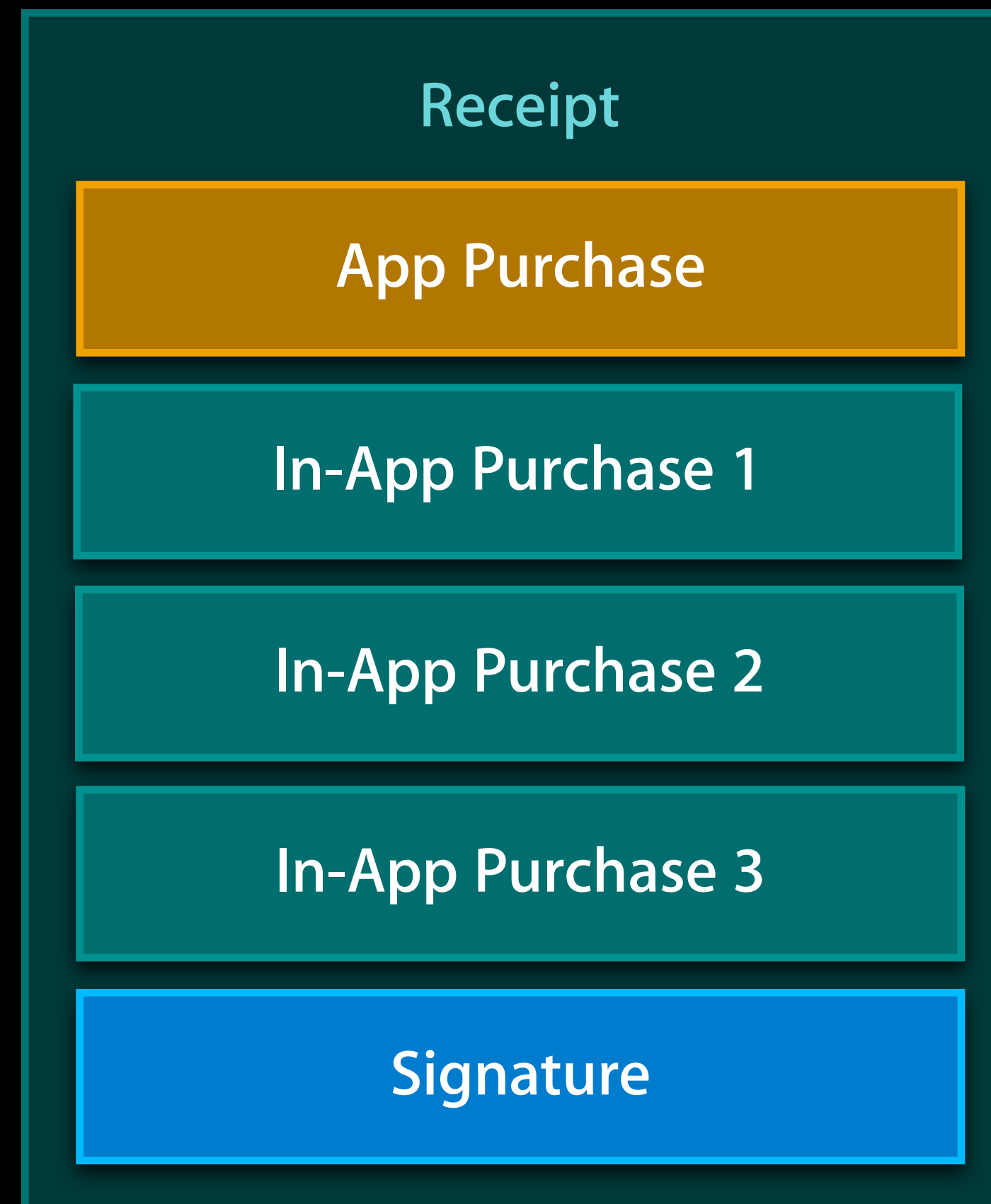
App Purchase

In-App Purchase 1

In-App Purchase 2

In-App Purchase 3

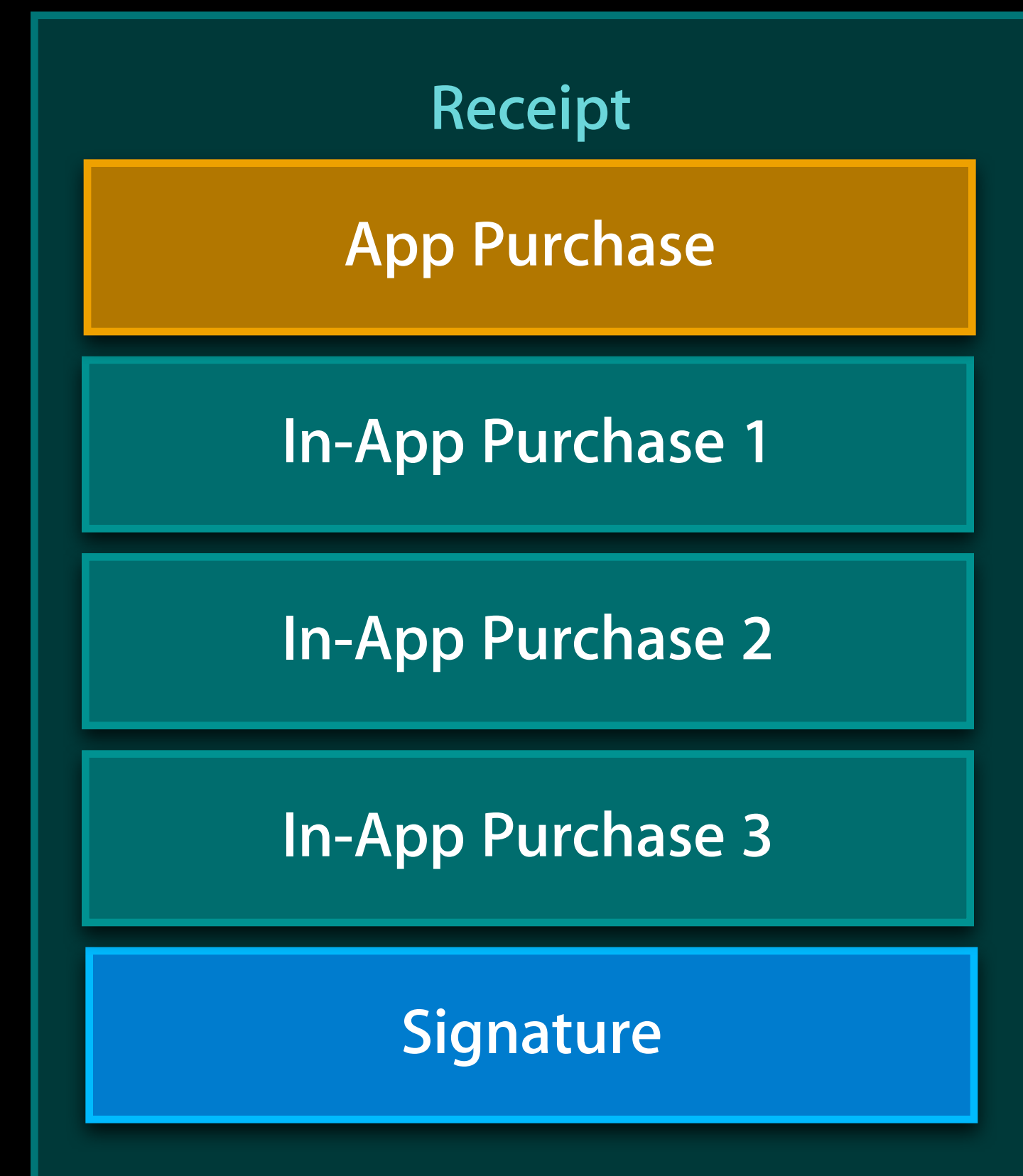
# Evolution of the Receipt



# Grand Unified Receipt



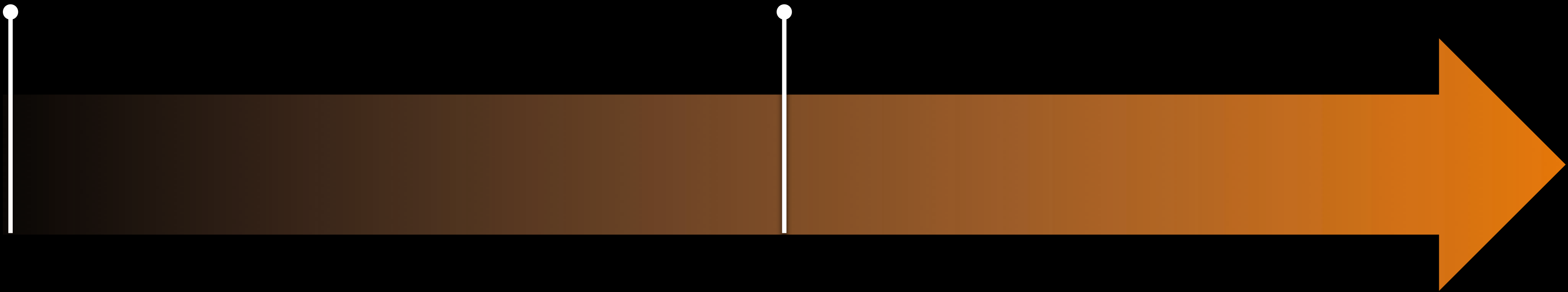
- Same receipt format for iOS 7 and OS X
- Managed for you
- You can validate on device
- Includes app purchase receipt
  - Extra level of security on iOS
  - Helps apps switch to “freemium” model



# Switching to Freemium

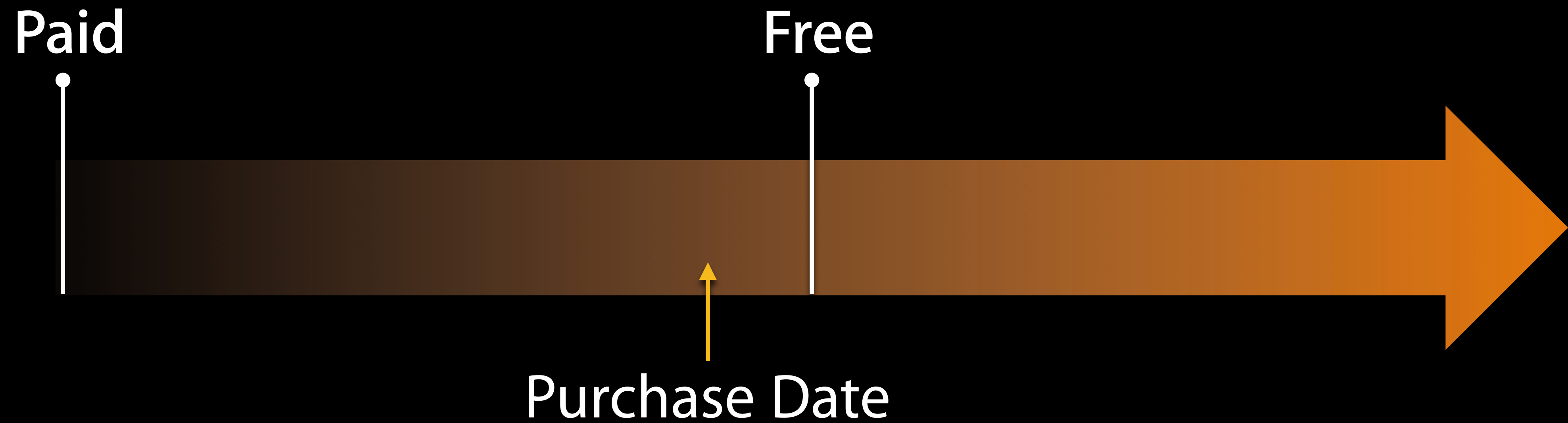
Paid

Free





# Switching to Freemium



# Pre-iOS 7 Receipts



Deprecated

# Pre-iOS 7 Receipts

- Existing apps continue to work
- Transition to new receipt
- Use weak linking to support both iOS 6 and iOS 7 receipts

```
[[NSBundle mainBundle] respondsToSelector:@selector(appStoreReceiptURL)];
```

# Volume Purchase Program

## New licensing model

- Opt in using iTunes Connect
- Organizations can buy licenses in bulk
- Licenses can be assigned to members
- Licenses can be taken back
- Grace period before expiration



# Volume Purchase Program

## Handling the expiration

- iOS prevents your app from launching if expired
- OS X does not enforce expiration
- In both cases, app enforces expiration
- New fields in the receipt

# Related Sessions

Extending Your Apps for Enterprise and Education Use

Nob Hill  
Tuesday 3:15PM

Using Receipts to Protect Your Digital Sales

Presidio  
Thursday 2:00PM

# Free Hosted In-App Purchases



- Use them to provide optional content packages
- We will host them, serve them, and deliver them in the background
- You don't need servers anymore
- They are still regular hosted in-app purchases
  - User needs to authenticate to "buy" them
  - Go through review process

# Consumable Products

- Provided to the app once
- Can be purchased multiple times
- Not restored
- Up to the app to manage
  - VoIP credit
  - Gold coins





# Non-Consumable Products

- Persistent
- Restored across multiple devices
- Managed by Store Kit
  - Game levels
  - Books, magazines

# Auto-Renewable Subscriptions

- Commonly used for periodic content
- Renew automatically
- One transaction per renewal
- Incentive for users to provide email address

# Non-Renewing Subscriptions

- For all other subscriptions
- Provided once to the app
- Not restored
- No duration information
- Up to the app to manage the subscription
  - Flight charts
  - Access to financial services
  - Professional apps

# Types of In-App Purchases



	iOS	OS X
Consumable	✓	✓
Non-consumable	✓	✓
Auto-renewable subscription	✓	
Non-renewing subscription	✓	

# Types of In-App Purchases



	iOS	OS X
Consumable	✓	✓
Non-consumable	✓	✓
Auto-renewable subscription	✓	✓
Non-renewing subscription	✓	✓

# Cross-Platform Subscriptions

- Separate product identifiers on OS X and iOS
- You can still use your own account tracking

# Agenda

What's new in Store Kit

Implementing in-app purchases

Using the test environment

Tips for passing app review

# Implementing In-App Purchases

Transitioning to the new receipt format



# Sessions from Last Year

## Documentation

In-App Purchase Programming Guide

Receipt Validation Programming Guide

<http://developer.apple.com>

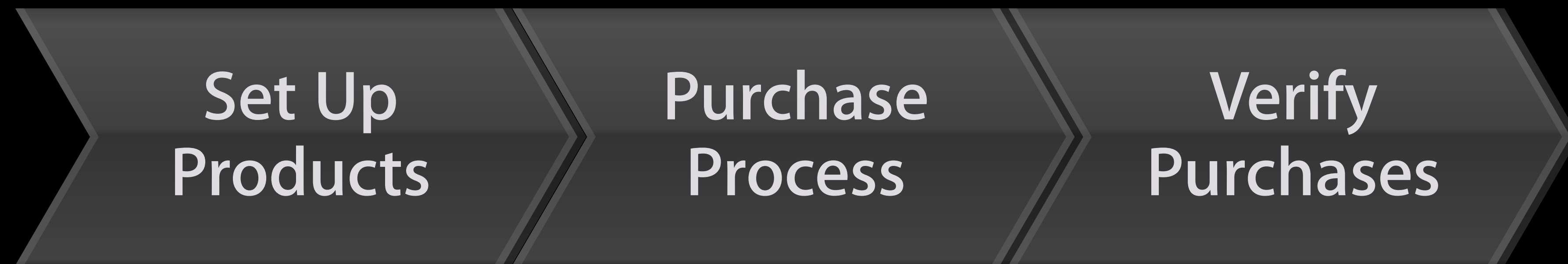
## WWDC session

Selling Products with Store Kit

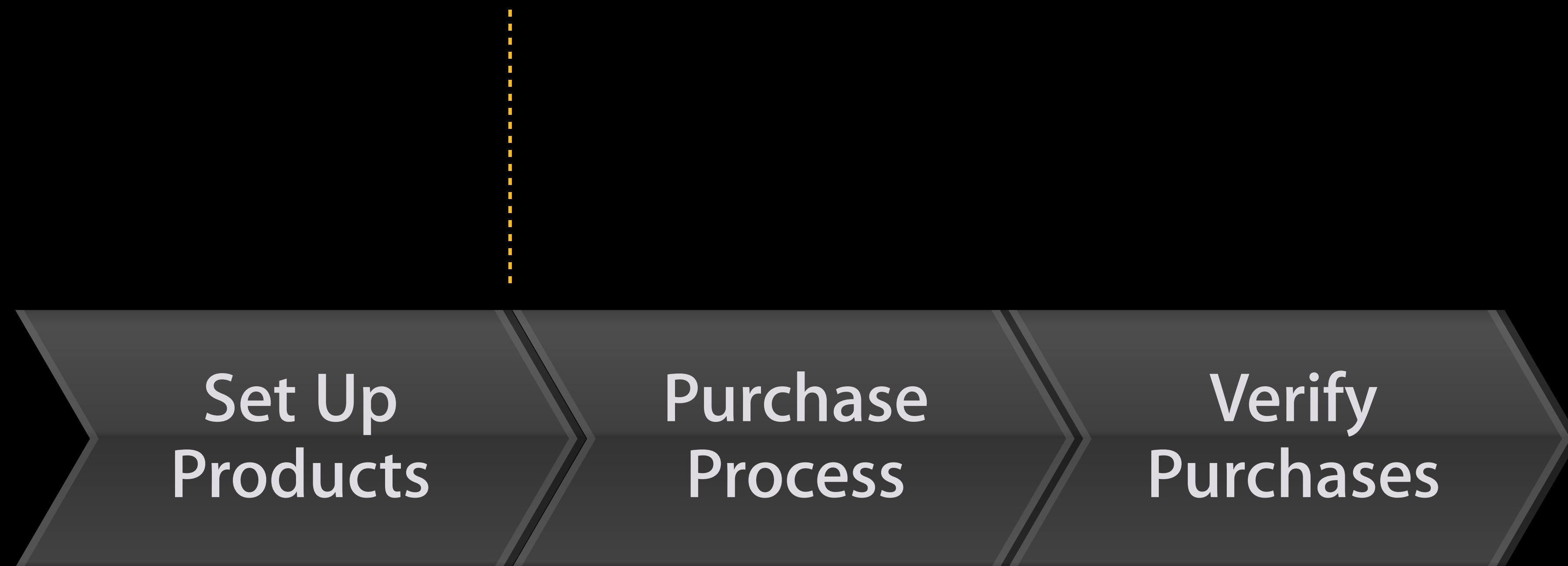
<https://developer.apple.com/videos/wwdc/2012/>

# Three Phases

# Three Phases

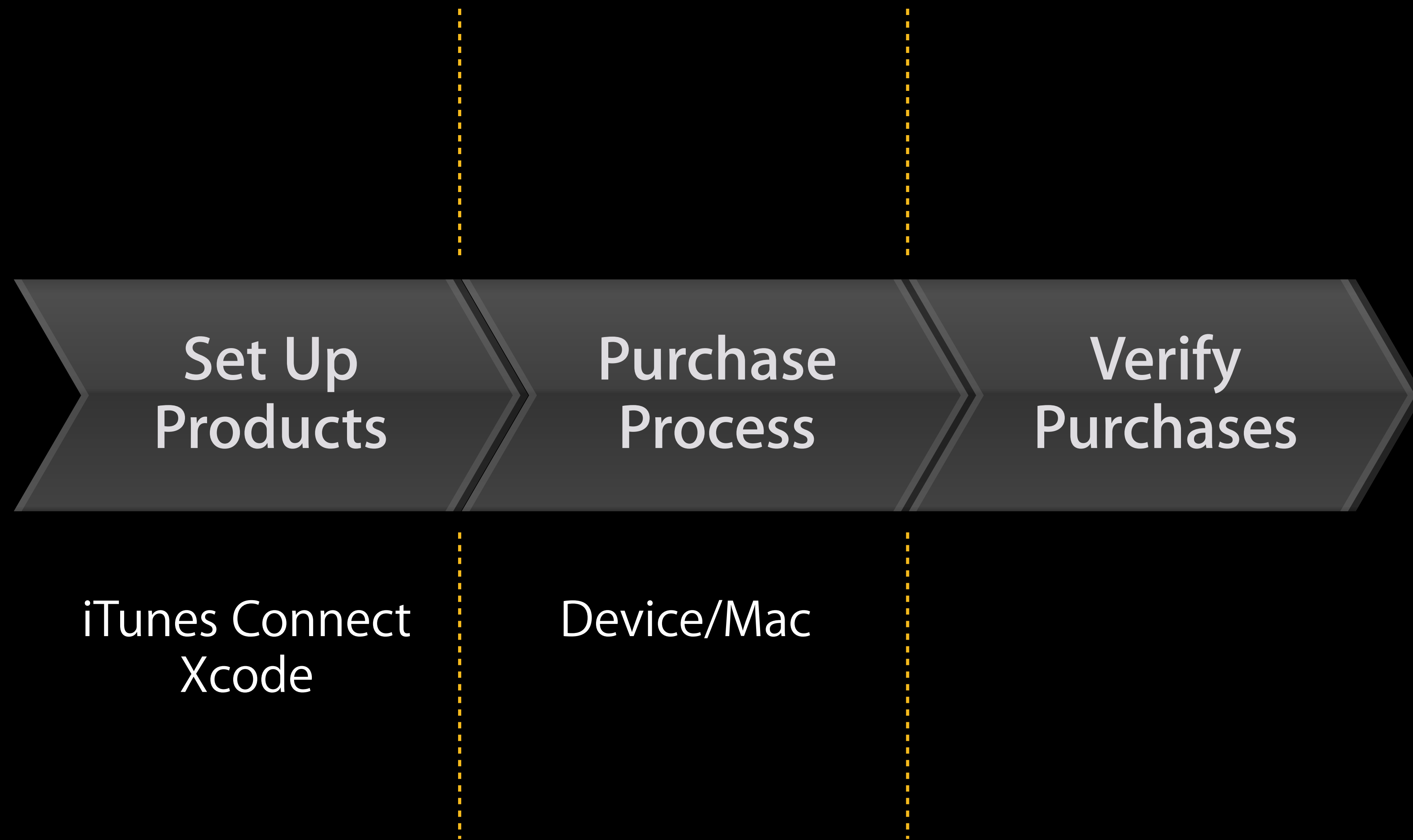


# Three Phases

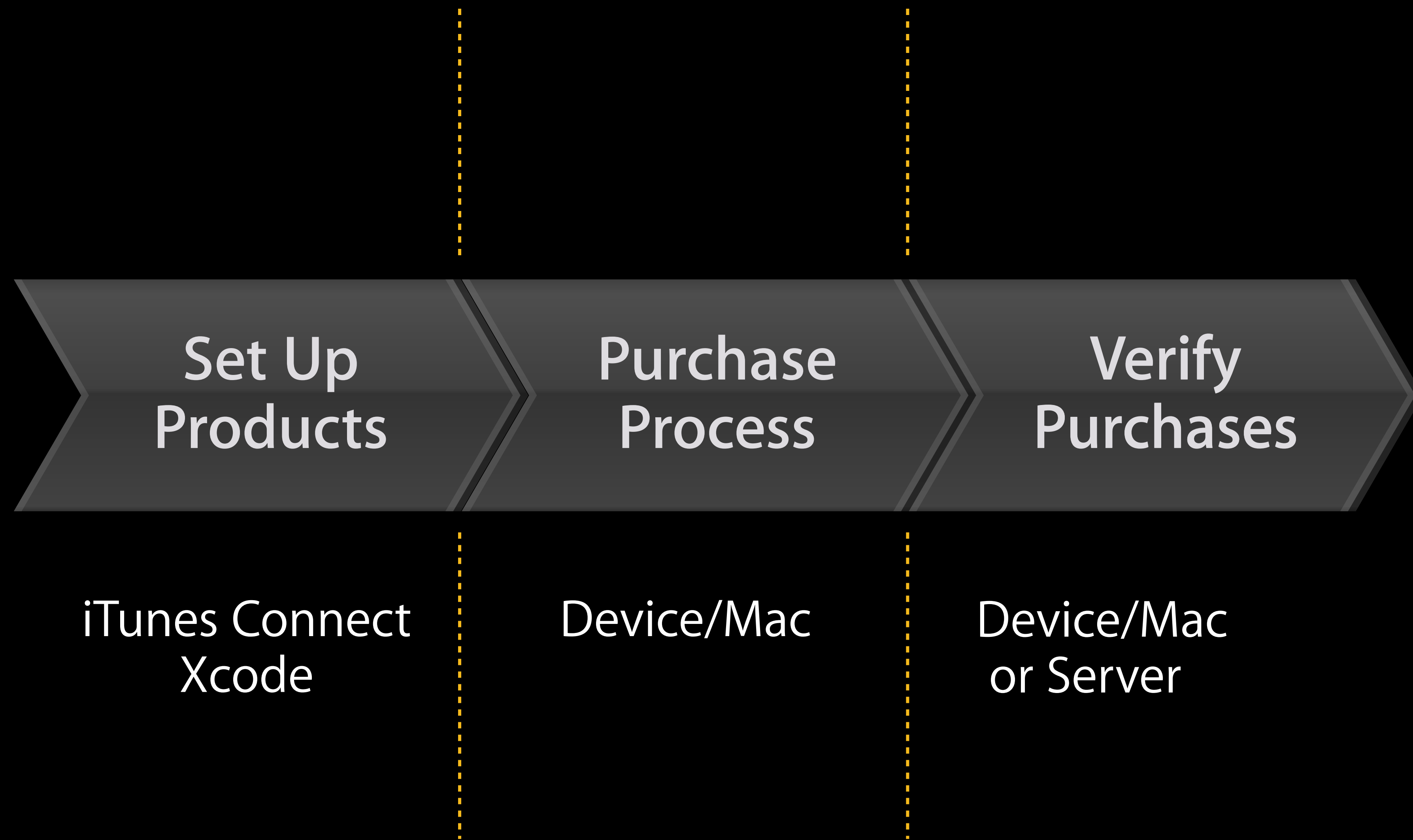


iTunes Connect  
Xcode

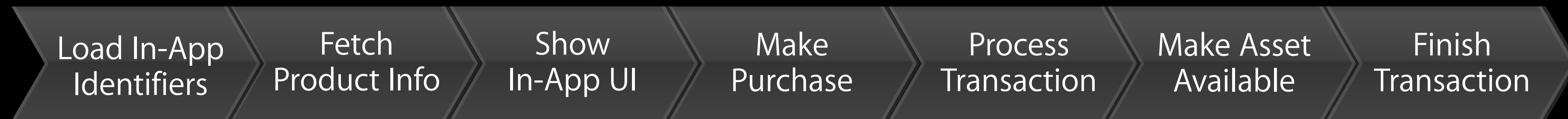
# Three Phases



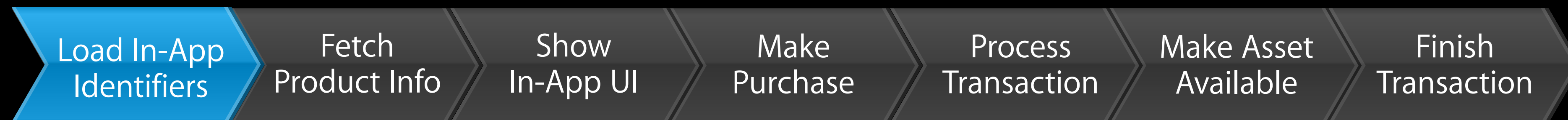
# Three Phases



# In-App Process Overview



# In-App Process Overview





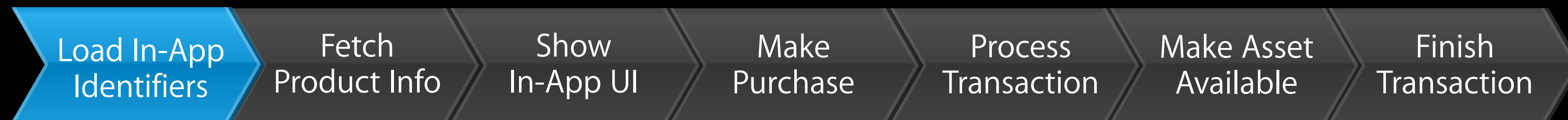
# Product Identifiers

- Stored inside your app

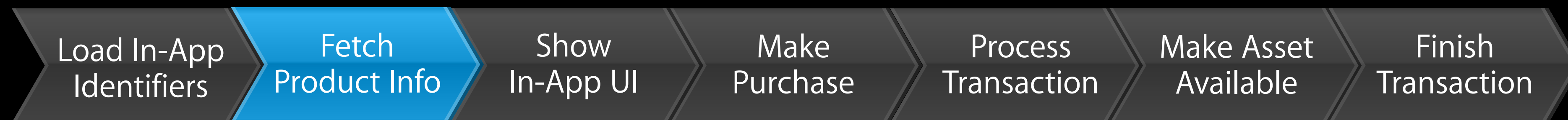
```
NSArray* productIdentifiers = @[@"com.myCompany.myApp.product1",  
                                @"com.myCompany.myApp.product2",  
                                @"com.myCompany.myApp.product3"];
```

- Fetched from your server
  - Good for dynamic catalog

# In-App Process Overview



# In-App Process Overview



# Making a Product Request

# Making a Product Request

```
NSSet* identifierSet = [NSSet setWithArray:productIdentifiers];
```

# Making a Product Request

```
NSSet* identifierSet = [NSSet arrayWithArray:productIdentifiers];
```

```
SKProductsRequest* request = [[SKProductsRequest alloc]  
    initWithProductIdentifiers: identifierSet];
```

# Making a Product Request

```
NSSet* identifierSet = [NSSet arrayWithArray:productIdentifiers];
```

```
SKProductsRequest* request = [[SKProductsRequest alloc]  
                               initWithProductIdentifiers: identifierSet];
```

```
request.delegate = self;  
[request start];
```

# Product Response

SKRequestDelegated protocol



# Product Response

## SKRequestDelegate protocol

– (void)request:(SKRequest \*)request didFailWithError:(NSError \*)error

# Product Response

## SKRequestDelegate protocol

- (void)request:(SKRequest \*)request didFailWithError:(NSError \*)error
- (void)productsRequest:(SKProductsRequest \*)request  
didReceiveResponse:(SKProductsResponse \*)response

# Product Response

## SKRequestDelegate protocol

- (void)request:(SKRequest \*)request didFailWithError:(NSError \*)error
- (void)productsRequest:(SKProductsRequest \*)request  
didReceiveResponse:(SKProductsResponse \*)response

response.**invalidProductIdentifiers**

# Product Response

## SKRequestDelegate protocol

- (void)request:(SKRequest \*)request didFailWithError:(NSError \*)error
- (void)productsRequest:(SKProductsRequest \*)request  
didReceiveResponse:(SKProductsResponse \*)response

response.**invalidProductIdentifiers**

response.**products**

# SKProduct Properties

response.products

- Localized title
- Localized description
- Price
- Price locale

# SKProduct Properties

response.products

- Localized title
- Localized description
- Price
- Price locale
- Hosted
  - Content size
  - Content version

# Formatting the Product Price

# Formatting the Product Price

```
NSNumberFormatter *numberFormatter = [[NSNumberFormatter alloc] init];
```



# Formatting the Product Price

```
NSNumberFormatter *numberFormatter = [[NSNumberFormatter alloc] init];  
[numberFormatter setNumberStyle:NSNumberFormatterCurrencyStyle];  
[numberFormatter setLocale:product.priceLocale];
```

# Formatting the Product Price

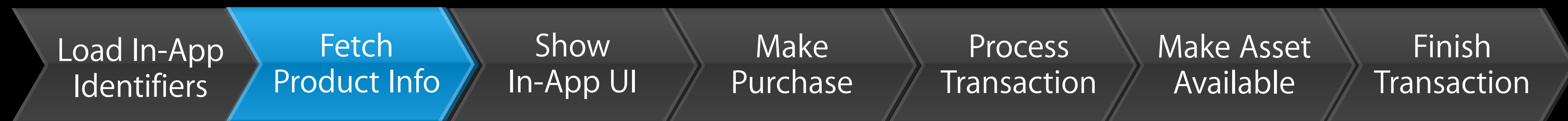
```
NSNumberFormatter *numberFormatter = [[NSNumberFormatter alloc] init];  
[numberFormatter setNumberStyle:NSNumberFormatterCurrencyStyle];  
[numberFormatter setLocale:product.priceLocale];  
NSString *formattedString = [numberFormatter  
    stringFromNumber:product.price];
```

# Formatting the Product Price

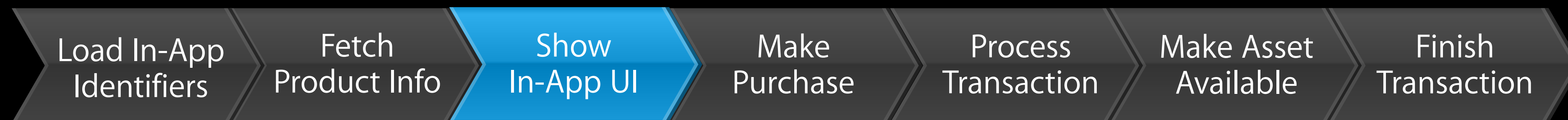
```
NSNumberFormatter *numberFormatter = [[NSNumberFormatter alloc] init];  
[numberFormatter setNumberStyle:NSNumberFormatterCurrencyStyle];  
[numberFormatter setLocale:product.priceLocale];  
NSString *formattedString = [numberFormatter  
    stringFromNumber:product.price];
```

- Do not perform currency conversion

# In-App Process Overview



# In-App Process Overview



# In-App Purchase UI

- Up to the application
- Major effect on sales

MORE ▾

FEATURED JUST ADDED POPULAR MARVEL DC COMICS MY COMICS

SAME DAY AS PRINT - 5/22 See All ▶

Featured Publishers Series Genres Creators Search Purchases

# GET MORE COINS!



PILE OF COINS



\$0.99

180

BAG OF COINS



\$2.99

570

SACK OF COINS



\$7.99

1 620

BOX OF COINS



\$14.99

3 120

CHEST OF COINS



\$29.99

7 020

TRUNK OF COINS

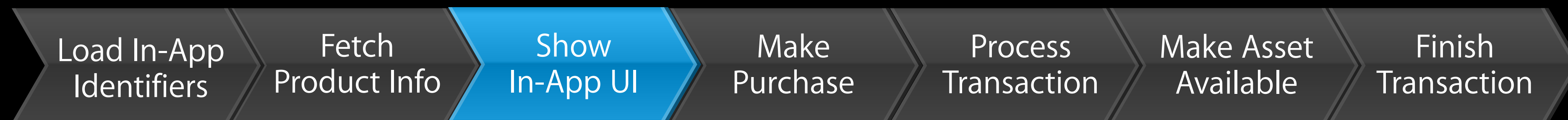


\$79.99

23 820



# In-App Process Overview



# In-App Process Overview



# Requesting a Payment

# Requesting a Payment

```
SKPayment* payment = [SKPayment paymentWithProduct:product];
```

# Requesting a Payment

```
SKPayment* payment = [SKPayment paymentWithProduct:product];  
[[SKPaymentQueue defaultQueue] addPayment:payment];
```

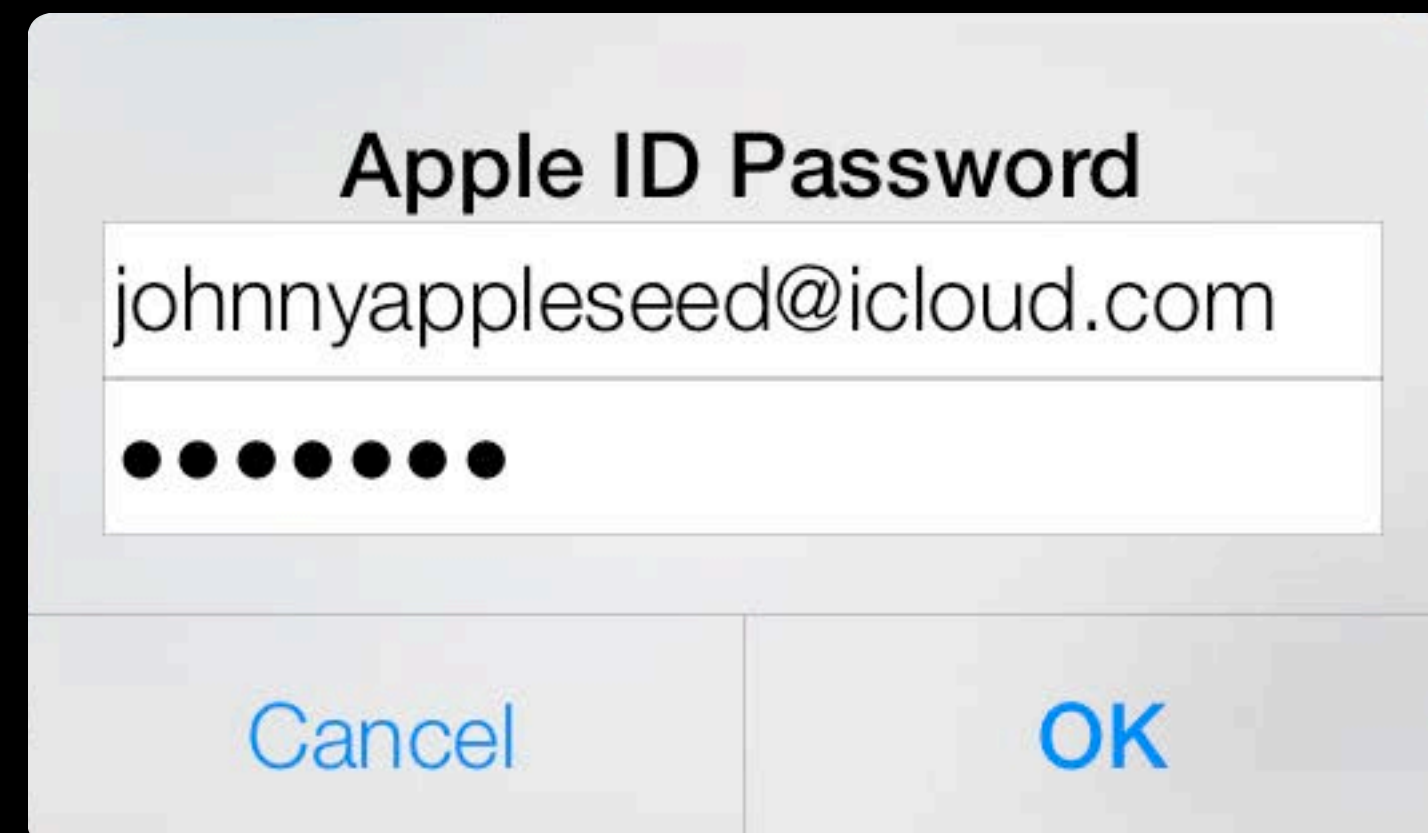
# Requesting a Payment

Apple ID Password

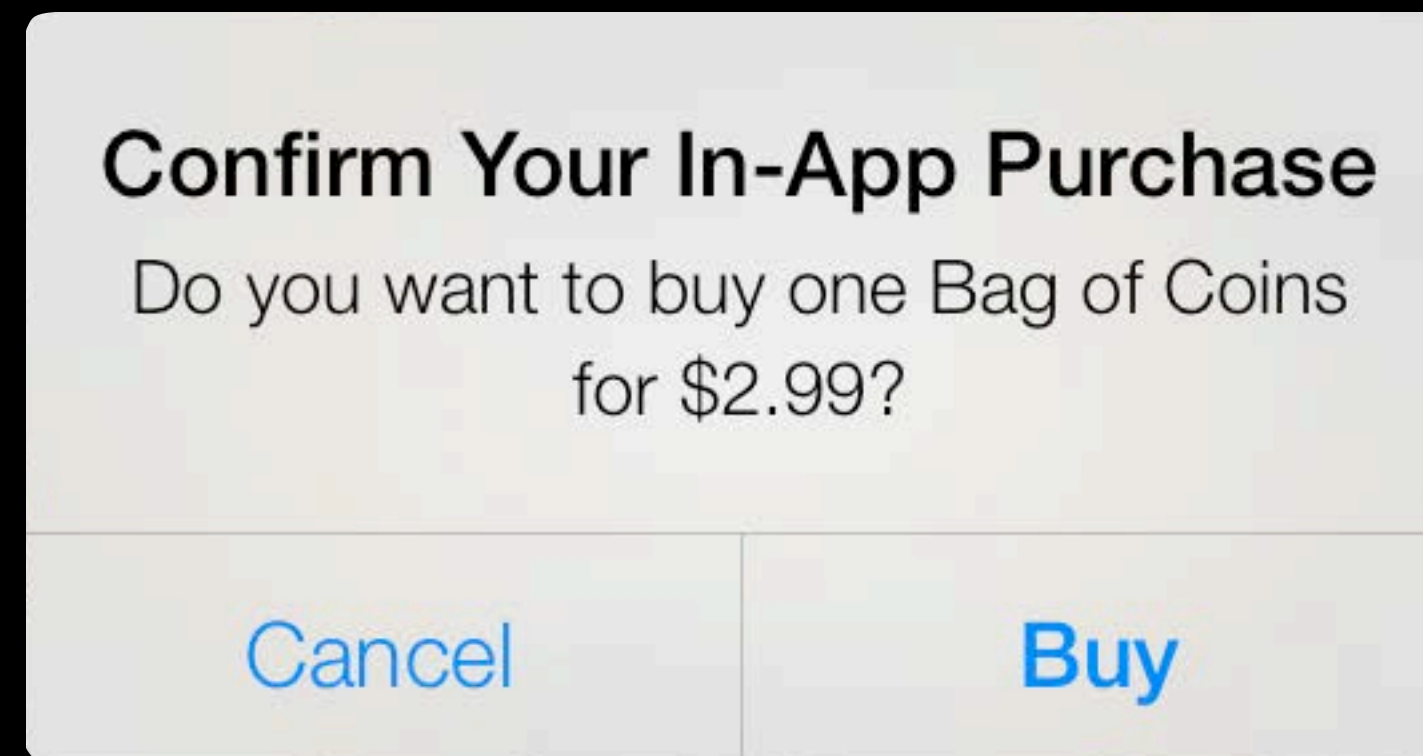
johnnyappleseed@icloud.com

●●●●●●●●

Cancel OK



# Requesting a Payment



# Requesting a Payment

iTunes Store





# Requesting a Payment

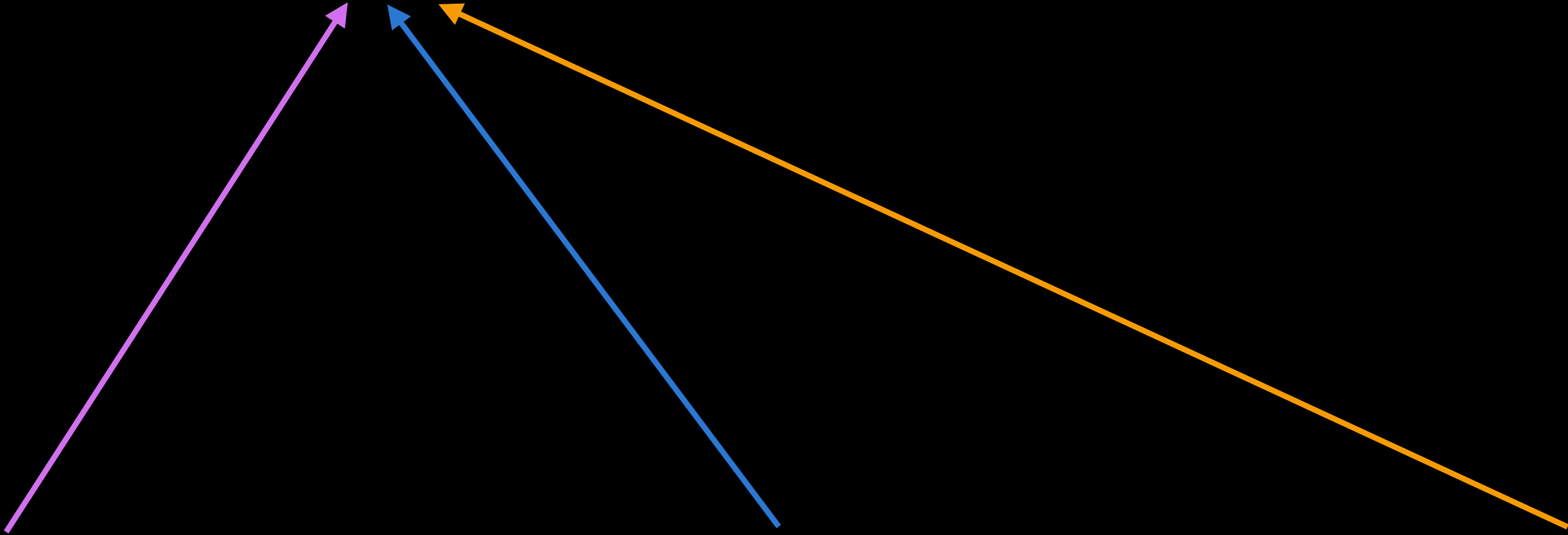
iTunes Store



# Detecting Irregular Activity

# Detecting Irregular Activity

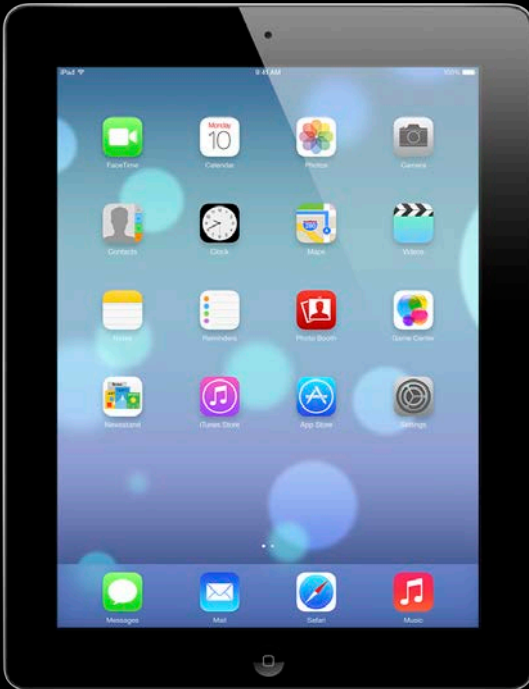
iTunes Store



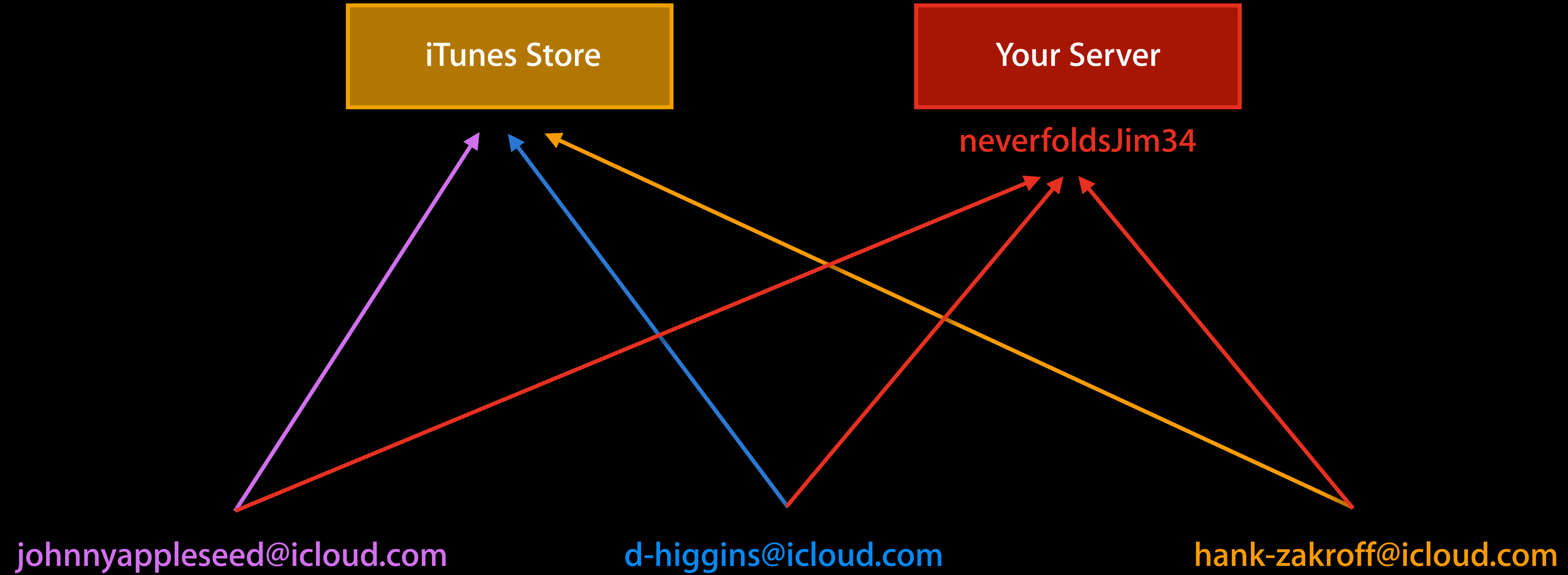
johnnyappleseed@icloud.com

d-higgins@icloud.com

hank-zakroff@icloud.com



# Detecting Irregular Activity



# Detecting Irregular Activity

## Provide account identifier



- For applications with their own account management
- Provide an **opaque identifier** for **your user's account**
  - Don't send us the Apple ID!
  - Don't provide the account name!
  - Don't provide the password either!
  - We suggest a hash of the account name

# Detecting Irregular Activity

## Provide account identifier



- For applications with their own account management
- Provide an **opaque identifier** for **your user's account**
  - Don't send us the Apple ID!
  - Don't provide the account name!
  - Don't provide the password either!
  - We suggest a hash of the account name

```
SKPayment *payment = [SKPayment paymentWithProduct:product];
```

# Detecting Irregular Activity

## Provide account identifier



- For applications with their own account management
- Provide an **opaque identifier** for **your user's account**
  - Don't send us the Apple ID!
  - Don't provide the account name!
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  - We suggest a hash of the account name

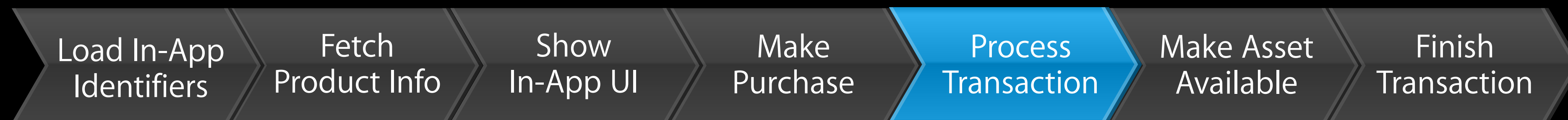
```
SKPayment *payment = [SKPayment paymentWithProduct:product];  
payment.applicationUsername = hash(customerAccountName);
```

# In-App Process Overview





# In-App Process Overview



# Processing a Transaction

iTunes Store



# Processing a Transaction

iTunes Store



# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

- (void)paymentQueue:(SKPaymentQueue \*)queue  
    updatedTransactions:(NSArray \*)transactions

# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions

    for (SKPaymentTransaction* transaction in transactions)
    {

    }
}
```

# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions

    for (SKPaymentTransaction* transaction in transactions)
    {
        switch(transaction.transactionState) {

        }

    }
}
```

# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions

for (SKPaymentTransaction* transaction in transactions)
{
    switch(transaction.transactionState) {
        case SKPaymentTransactionStatePurchased:

    }
}
```

# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions

for (SKPaymentTransaction* transaction in transactions)
{
    switch(transaction.transactionState) {
        case SKPaymentTransactionStatePurchased:
            NSData* receipt = transaction.receipt;

    }
}
```



# Observing the Payment Queue

## SKPaymentTransactionObserver protocol

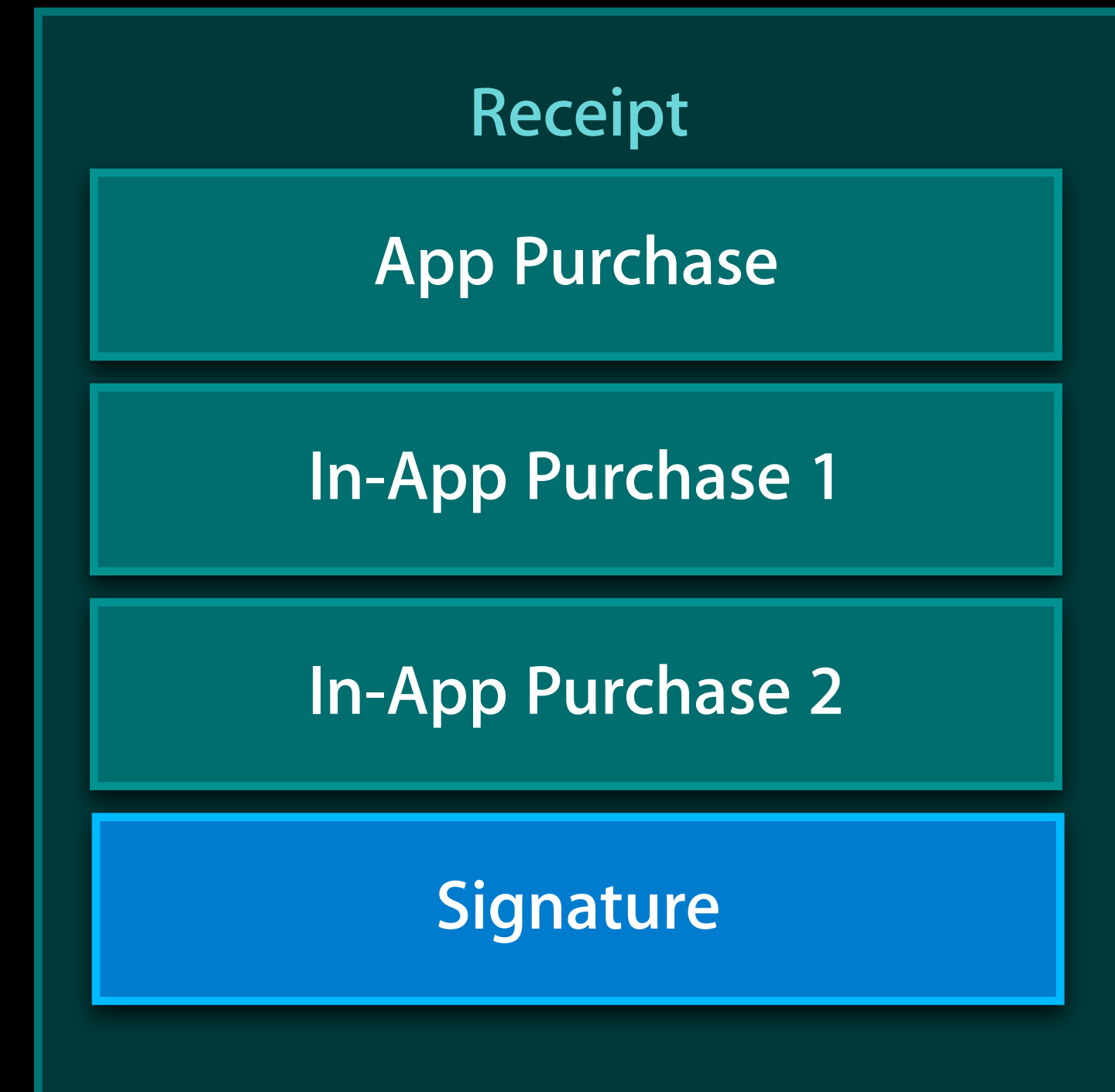
```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions

for (SKPaymentTransaction* transaction in transactions)
{
    switch(transaction.transactionState) {
        case SKPaymentTransactionStatePurchased:
            NSURL* receiptURL = [[NSBundle mainBundle] appStoreReceiptURL];
            NSData* receipt = [NSData dataWithContentsOfURL:receiptURL];

        }
    }
}
```

# Verifying the Receipt

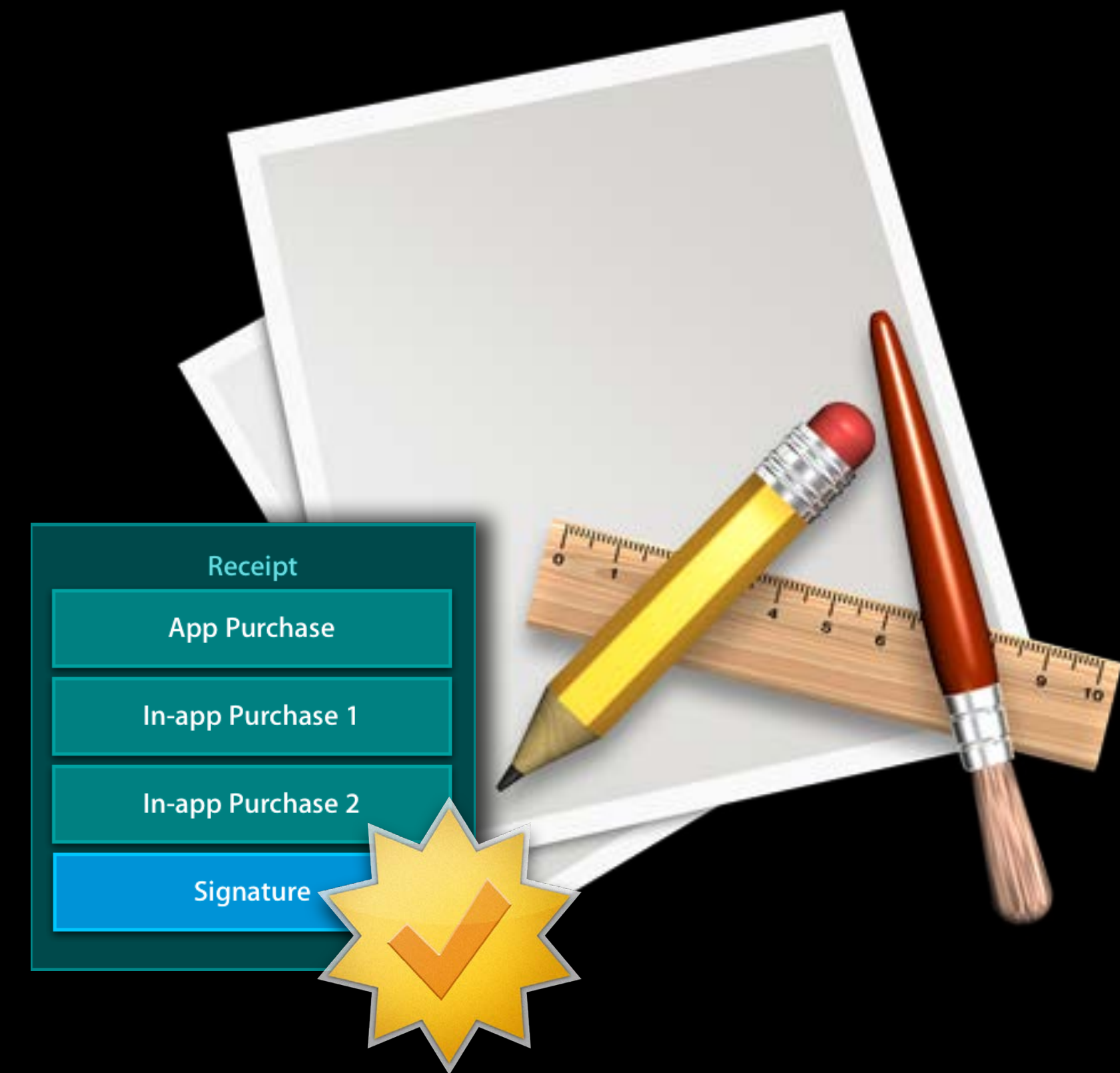
- Make it as strong as you deem necessary
- Verify on device
- Verify on server
- Or both



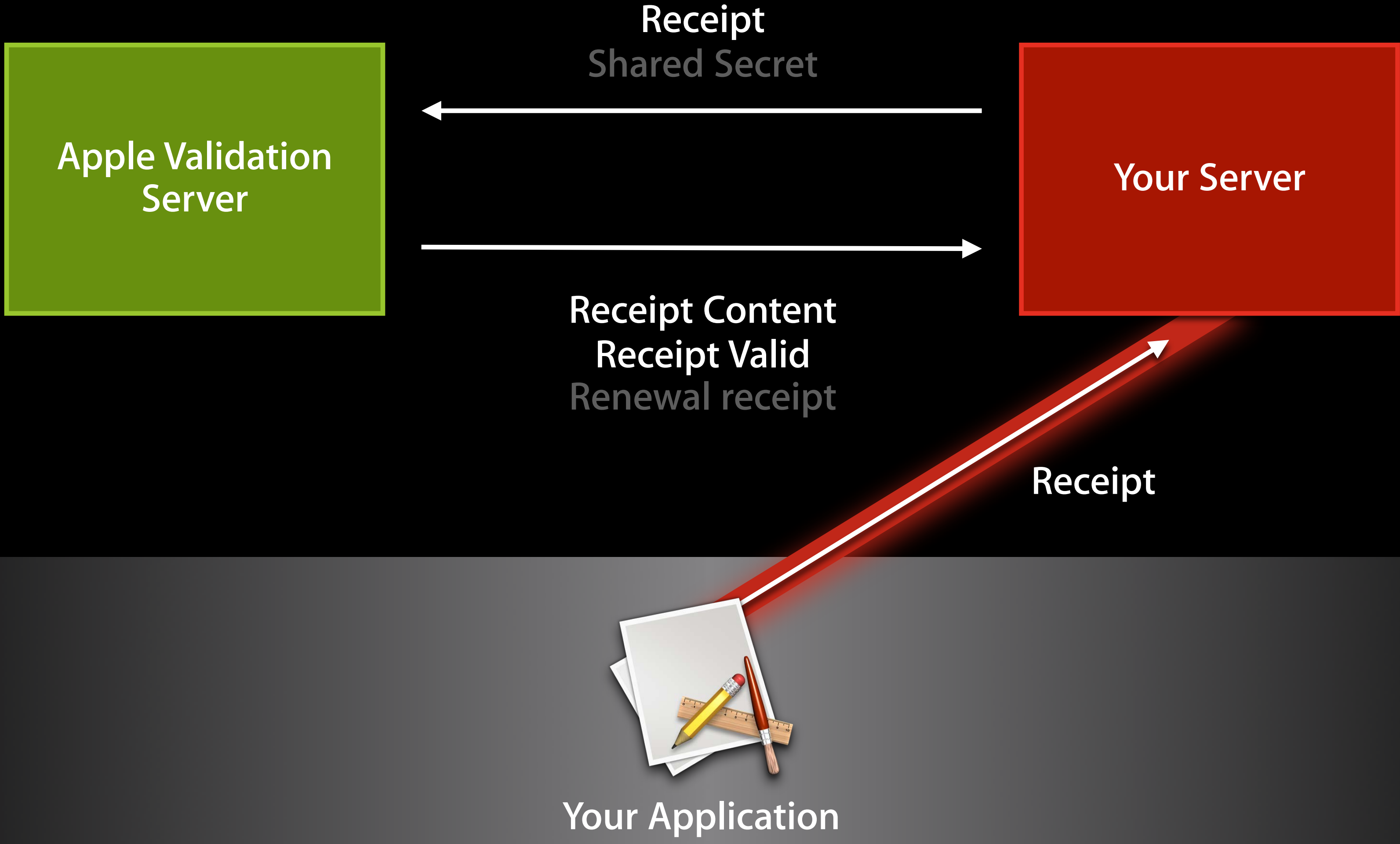
# Local Receipt Validation



- Preferred method
- As secure as OS X
- Works anytime
- Works offline



# Server-Based Receipt Validation

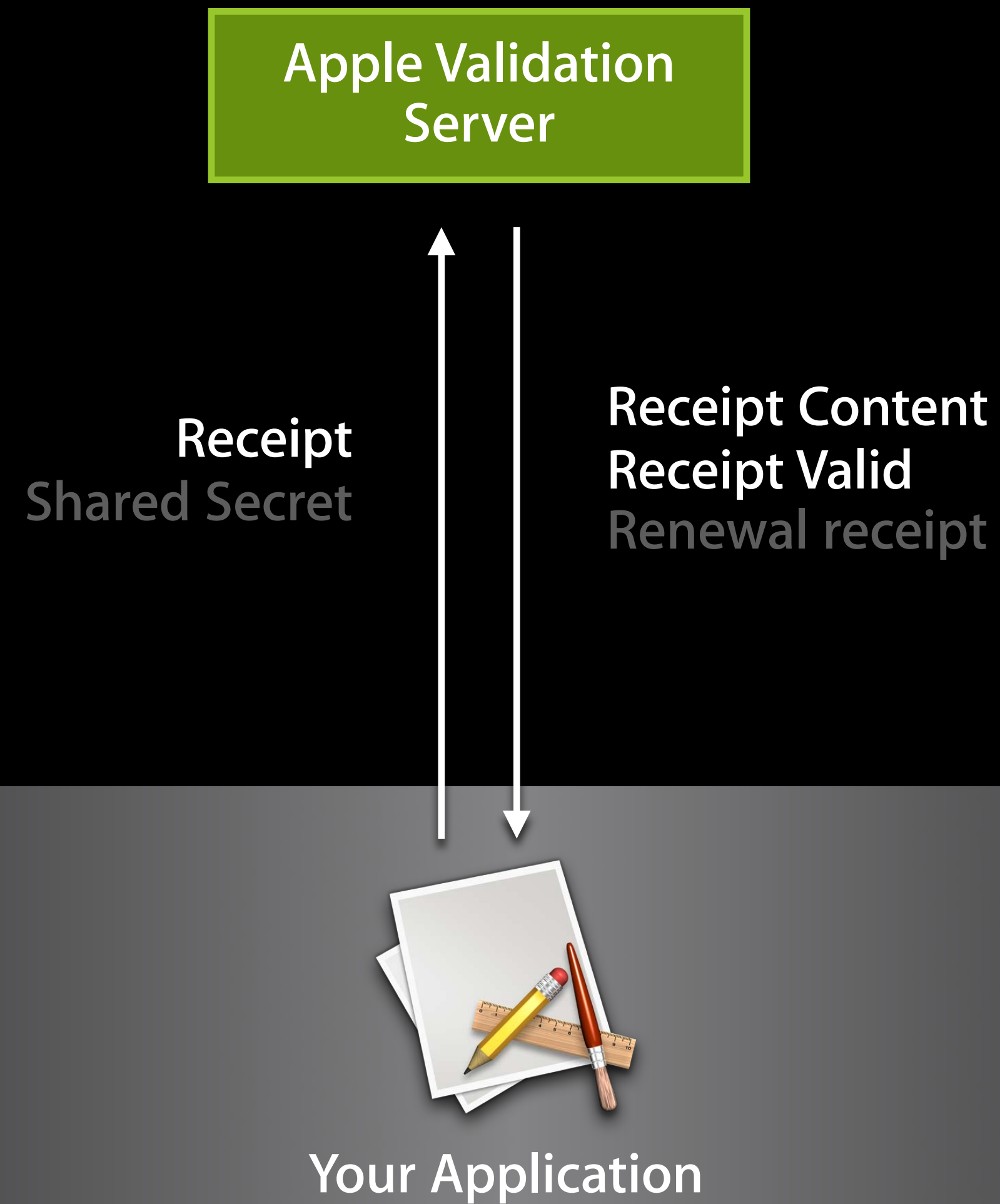


# Server-Based Receipt Validation

- Your server validates the receipt against Apple servers
- You own the secure connection to your server
  - SSL, EV cert validation, cert pinning
- Useful for auto-renewable subscriptions
- Requires an internet connection

# The Wrong Way

Validating against Apple servers from your app



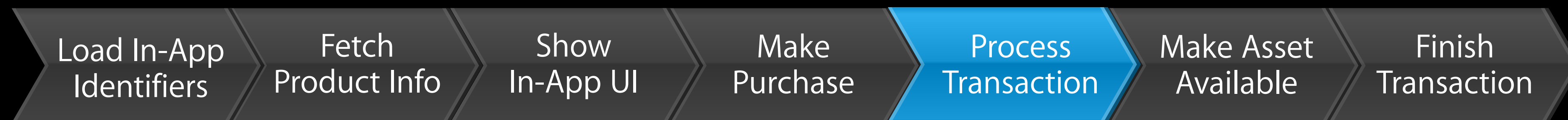
# Related Sessions

Using Receipts to Protect Your Digital Sales

Presidio  
Thursday 2:00PM

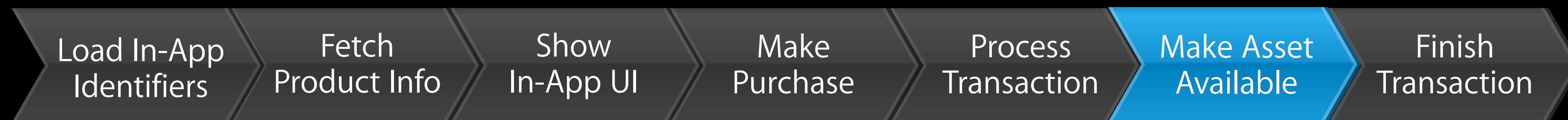


# In-App Process Overview





# In-App Process Overview



# Four Download APIs

- Unlock functionality in your app
- Download additional content
  - Hosted in-app purchases
  - Newsstand Kit downloads
  - iOS Background download API
  - Classic download

# Hosted In-App Purchases

- From Apple servers
- Scalable and reliable
- Download in the background
- Go through review
- 2GB limit per product identifier

# Hosted In-App Purchases

Initiating the download

# Hosted In-App Purchases

## Initiating the download

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions
    for(SKPaymentTransaction* transaction in transactions)
{

}
}
```

# Hosted In-App Purchases

## Initiating the download

```
– (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions
    for(SKPaymentTransaction* transaction in transactions)
    {
        if(transaction.downloads)

    }
```

# Hosted In-App Purchases

## Initiating the download

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedTransactions:(NSArray *)transactions
for(SKPaymentTransaction* transaction in transactions)
{
    if(transaction.downloads)
        [[SKPaymentQueue defaultQueue] startDownloads:
            transaction.downloads];
}
```

# Hosted In-App Purchases

Showing progress



# Hosted In-App Purchases

Showing progress

```
- (void)paymentQueue:(SKPaymentQueue *)queue  
    updatedDownloads:(NSArray *)downloads;
```

# Hosted In-App Purchases

## Showing progress

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedDownloads:(NSArray *)downloads;

download.progress
download.timeRemaining
```

# Hosted In-App Purchases

## Showing progress

```
- (void)paymentQueue:(SKPaymentQueue *)queue
    updatedDownloads:(NSArray *)downloads;

    download.progress
    download.timeRemaining
    download.state
    download.error
```

# Hosted In-App Purchases

## Showing progress

```
– (void)paymentQueue:(SKPaymentQueue *)queue  
    updatedDownloads:(NSArray *)downloads;
```

```
    download.progress
```

```
    download.timeRemaining
```

```
    download.state
```

```
    download.error
```

When `download.state` is `SKDownloadStateFinished`

```
    download.contentURL
```

# Newsstand Kit Downloads

- iOS only
- Only for periodicals
- From your own server
- Download in the background
- App can update icon upon completion

# Newsstand Kit Downloads

Initiating the download

# Newsstand Kit Downloads

## Initiating the download

```
NKLibrary library = [NKLibrary sharedInstance];
```

# Newsstand Kit Downloads

## Initiating the download

```
NKLibrary library = [NKLibrary sharedLibrary];  
NKIssue* issue = [library addIssueWithName:product.localizedTitle  
                    date:date];
```



# Newsstand Kit Downloads

## Initiating the download

```
NKLibrary library = [NKLibrary sharedLibrary];  
NKIssue* issue = [library addIssueWithName:product.localizedTitle  
                  date:date];  
NSURLRequest* request = [NSURLRequest requestWithURL:url];  
NKAssetDownload* download = [issue addAssetWithRequest:request];
```

# Newsstand Kit Downloads

## Initiating the download

```
NKLibrary library = [NKLibrary sharedLibrary];
NKIssue* issue = [library addIssueWithName:product.localizedTitle
                    date:date];
NSURLRequest* request = [NSURLRequest requestWithURL:url];
NKAssetDownload* download = [issue addAssetWithRequest:request];
[download downloadWithDelegate:self];
```

# Newsstand Kit Downloads

Reconnecting to the downloads

# Newsstand Kit Downloads

## Reconnecting to the downloads

```
NKLibrary library = [NKLibrary sharedInstance];
```

# Newsstand Kit Downloads

## Reconnecting to the downloads

```
NKLibrary library = [NKLibrary sharedLibrary];  
for (NKAssetDownload* download in [library downloadingAssets]) {
```

# Newsstand Kit Downloads

## Reconnecting to the downloads

```
NKLibrary library = [NKLibrary sharedLibrary];  
for (NKAssetDownload* download in [library downloadingAssets]) {  
    [download downloadWithDelegate:self];  
}
```

# Background Downloads



- iOS only
- From your own servers
- Download in the background
- Fine-grained cookie and credentials controls
- Power efficient

# Background Downloads

Initiating the download



# Background Downloads

## Initiating the download

```
NSURLSessionConfiguration *config = [NSURLSessionConfiguration  
    backgroundSessionConfiguration:@"MyBackgroundSession"];
```



# Background Downloads

## Initiating the download

```
NSURLSessionConfiguration *config = [NSURLSessionConfiguration
    backgroundSessionConfiguration:@"MyBackgroundSession"];
NSURLSession *session = [NSURLSession sessionWithConfiguration:config
    delegate:self delegateQueue:queue];
NSURLRequest *request = [NSURLRequest requestWithURL:myURL];
NSURLSessionDownloadTask *downloadTask = [session
    downloadTaskWithRequest:request];
```

# Background Downloads

## NSURLSessionDownloadDelegate

```
- (void)URLSession:(NSURLSession *)session
    downloadTask:(NSURLSessionDownloadTask *)downloadTask
    didWriteData:(int64_t)bytesWritten
    totalBytesWritten:(int64_t)totalBytesWritten
    totalBytesExpectedToWrite:(int64_t)totalBytesExpectedToWrite
{
    // do something with progress
}
```



# Background Downloads

Reconnecting to the downloads

# Background Downloads

## Reconnecting to the downloads

- (void)application:(UIApplication \*)application  
    handleEventsForBackgroundURLSession:(NSString \*)identifier  
    completionHandler:(void (^)(void))completionHandler

# Background Downloads

## Reconnecting to the downloads

```
- (void)application:(UIApplication *)application
    handleEventsForBackgroundURLSession:(NSString *)identifier
    completionHandler:(void (^)(void))completionHandler
{
    NSURLSessionConfiguration *config = [NSURLSessionConfiguration
        backgroundSessionConfiguration:identifier];
    NSURLSession *session = [NSURLSession sessionWithConfiguration:config
        delegate:self delegateQueue:queue];
}
```



# Background Downloads

## Reconnecting to the downloads

```
- (void)application:(UIApplication *)application
    handleEventsForBackgroundURLSession:(NSString *)identifier
    completionHandler:(void (^)(void))completionHandler
{
    NSURLSessionConfiguration *config = [NSURLSessionConfiguration
        backgroundSessionConfiguration:identifier];
    NSURLSession *session = [NSURLSession sessionWithConfiguration:config
        delegate:self delegateQueue:queue];
    self.completionHandler = completionHandler; // call when done
}
```

# Related Sessions

What's New in Foundation Networking

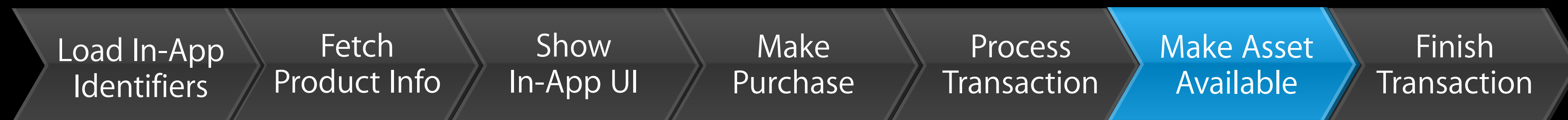
Mission  
Wednesday 9:00AM



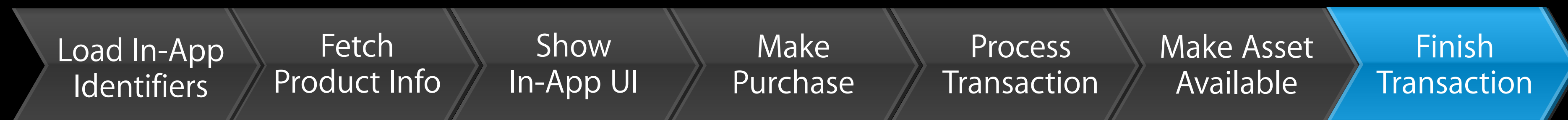
# Classic Downloads

- Stops when apps get backgrounded
- User has to wait in the app
- Background task completions have changed
  - No longer prevent sleep
  - Not guaranteed to be immediately executed

# In-App Process Overview



# In-App Process Overview



# Finish the Transaction

# Finish the Transaction

```
[[SKPaymentQueue defaultQueue] finishTransaction:transaction];
```

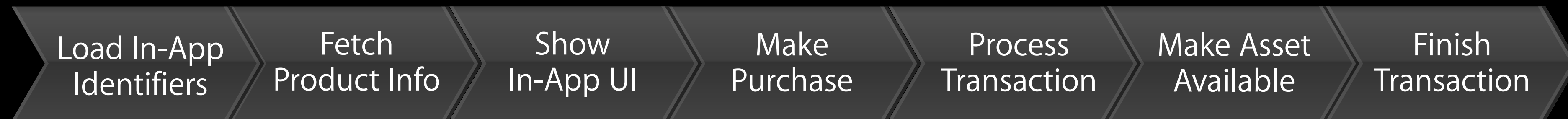
# Finish the Transaction

```
[[SKPaymentQueue defaultQueue] finishTransaction:transaction];
```

- Improves launch times
- Reduces cellular data consumption



# In-App Process Overview



# Install Payment Queue Observer

At application launch time

```
[[SKPaymentQueue defaultQueue] addObserver:self];
```

- Transactions can happen any time
  - Network losses
  - User redeems a gift code
  - Subscription renewals
- In `appDidFinishLaunching`

# Restoring In-App Purchases

```
[[SKPaymentQueue defaultQueue] restoreCompletedTransactions]
```

- Nothing changes except the receipt

# Agenda

What's new in Store Kit

Implementing in-app purchases

Using the test environment

Tips for passing app review

# Using the Test Environment

# The Test Environment

a.k.a. Sandbox

# The Test Environment

a.k.a. Sandbox



Production

# The Test Environment

a.k.a. Sandbox



Production

Sandbox



# The Test Environment

a.k.a. Sandbox

Production

Sandbox

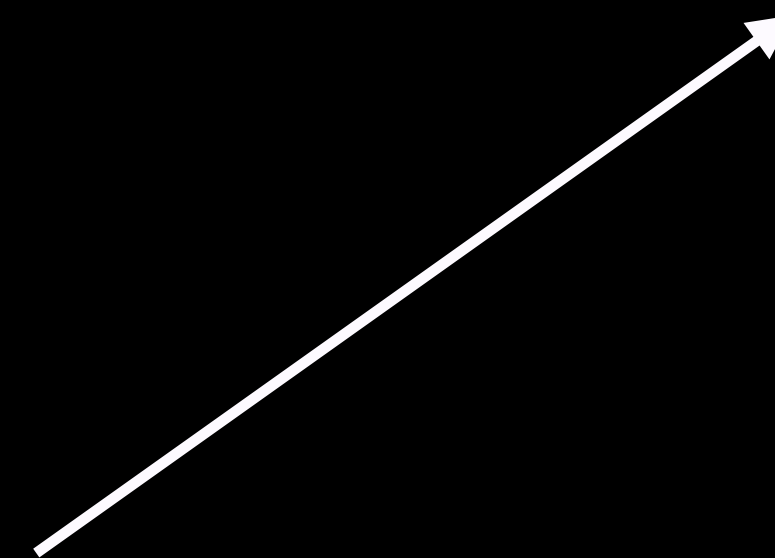


# The Test Environment

a.k.a. Sandbox

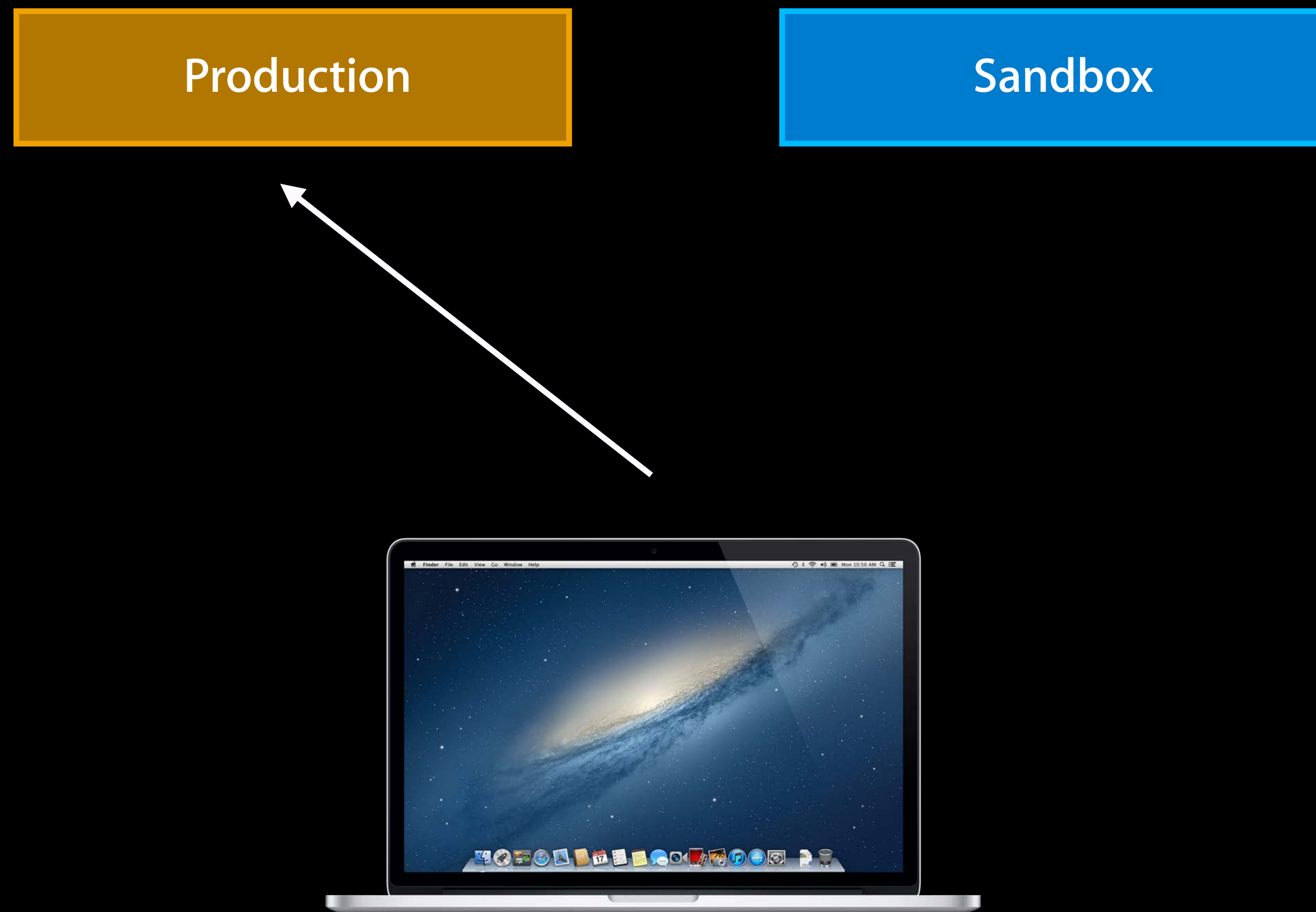
Production

Sandbox



# The Test Environment

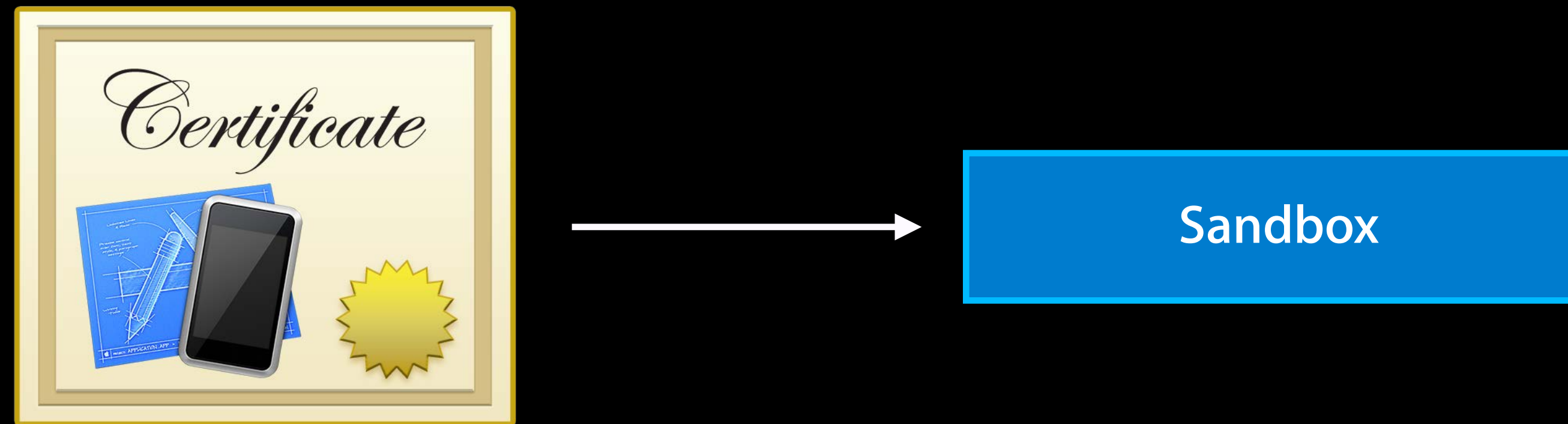
a.k.a. Sandbox



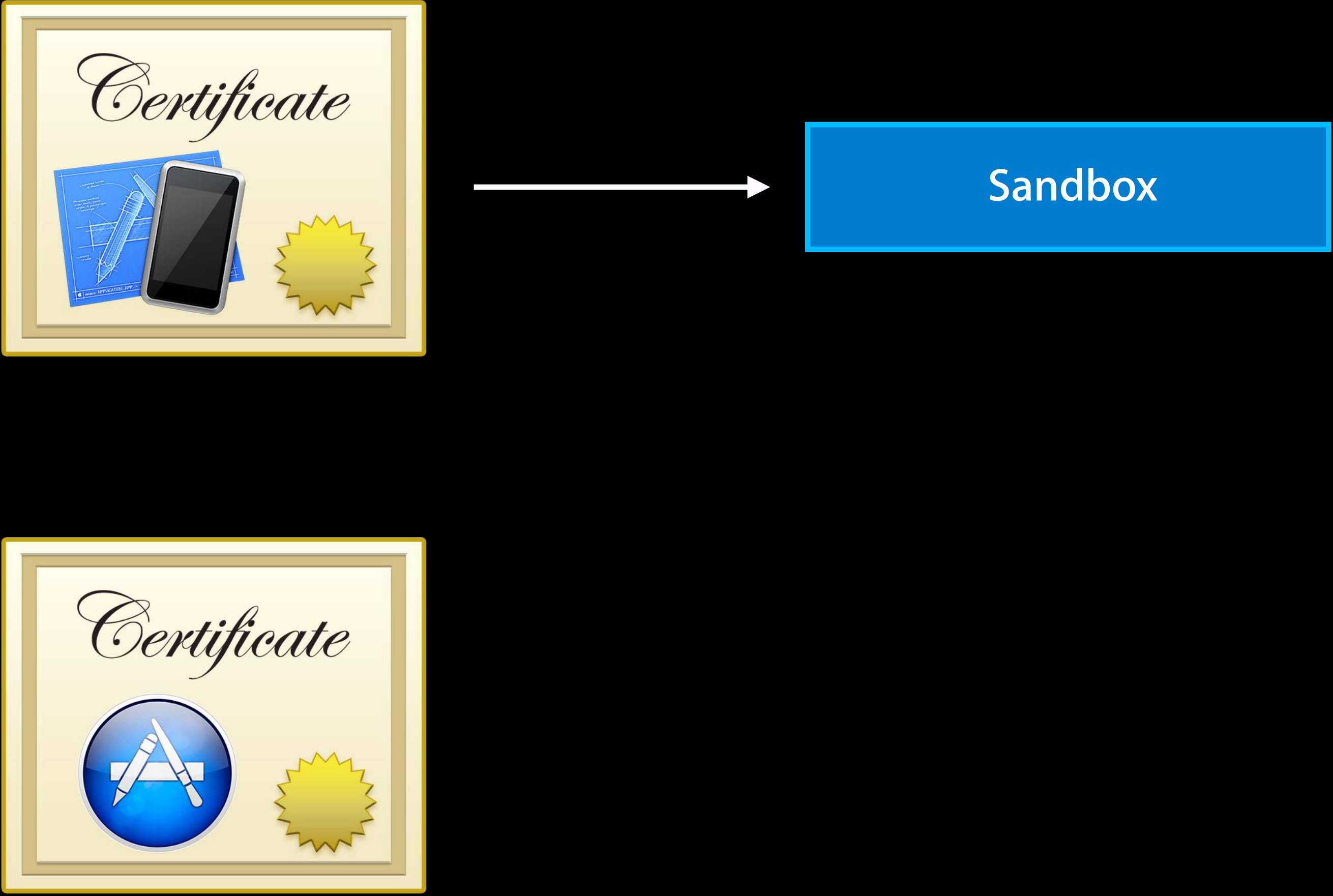
# Based on Application Code Signing



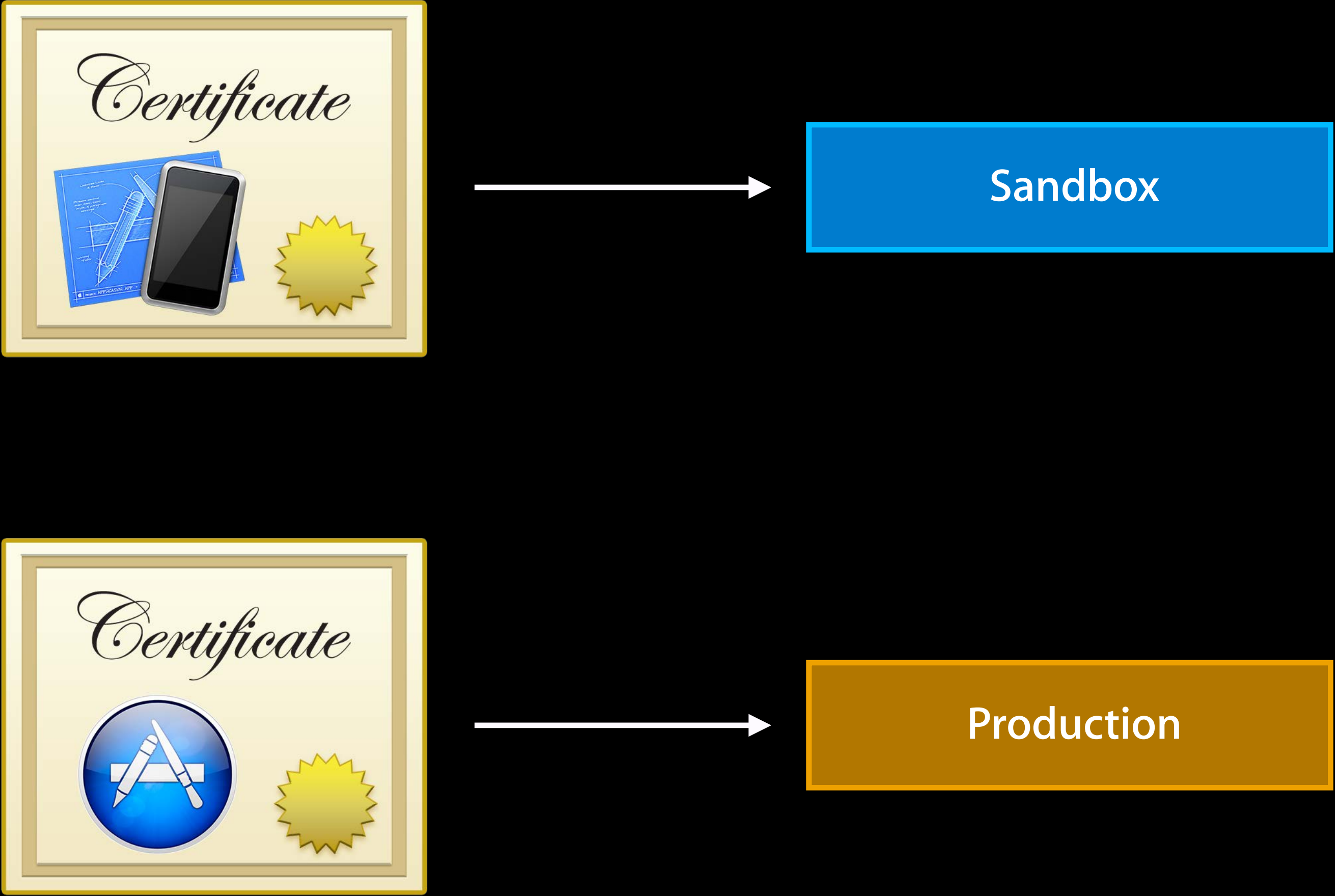
# Based on Application Code Signing



# Based on Application Code Signing



# Based on Application Code Signing



# How to Be Sure



# How to Be Sure

## Confirm Your In-App Purchase

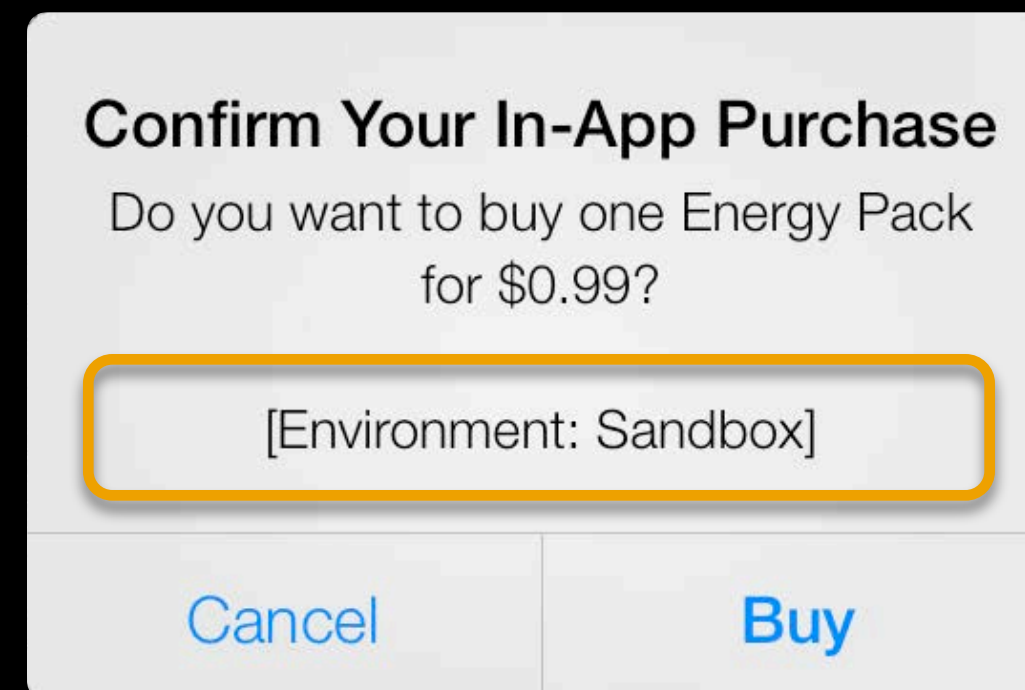
Do you want to buy one Energy Pack  
for \$0.99?

[Environment: Sandbox]

Cancel

Buy

# How to Be Sure



# The Test Environment

## Differences

- No charge
- Receipts won't validate against Apple Production servers
- Can request expired and/or revoked receipts
- Expired receipts won't prevent your iOS app from launching
- Time contraction

# Subscription Timing

Face Value	Actual Duration
7 Days	3 minutes
1 Month	5 minutes
2 Months	10 minutes
3 Months	15 minutes
6 Months	30 minutes
1 Year	60 minutes

Maximum 6 renewals per 8-hour window

# Setting up the Test Environment

- Setup in iTunes Connect
  - Create a test user
  - Enter products for sale
- Build and sign your app
- Mac: Launch from Finder once to fetch a receipt
- Buy many products!

# Verifying Receipt During App Review

Development

# Verifying Receipt During App Review

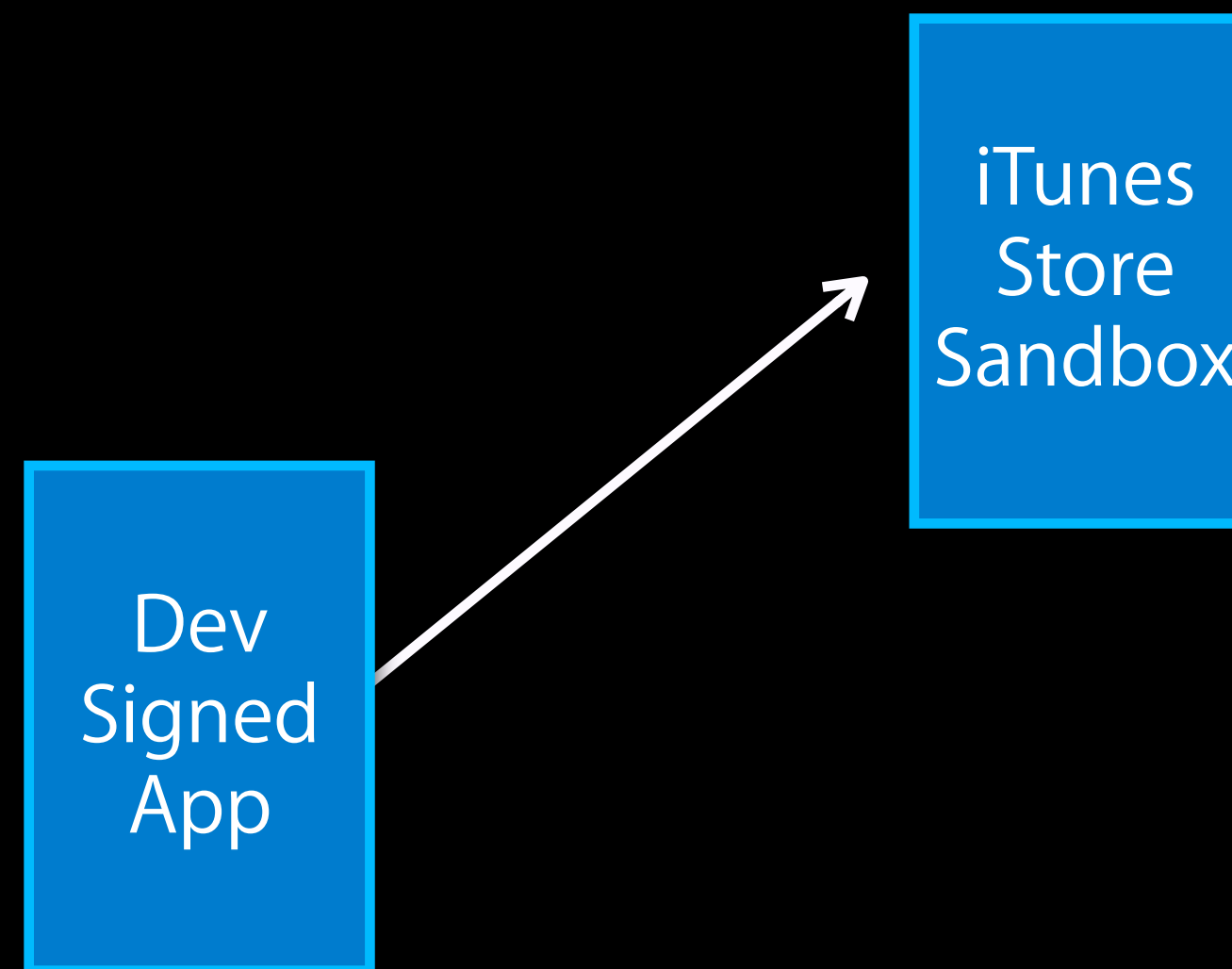
Development



Dev  
Signed  
App

# Verifying Receipt During App Review

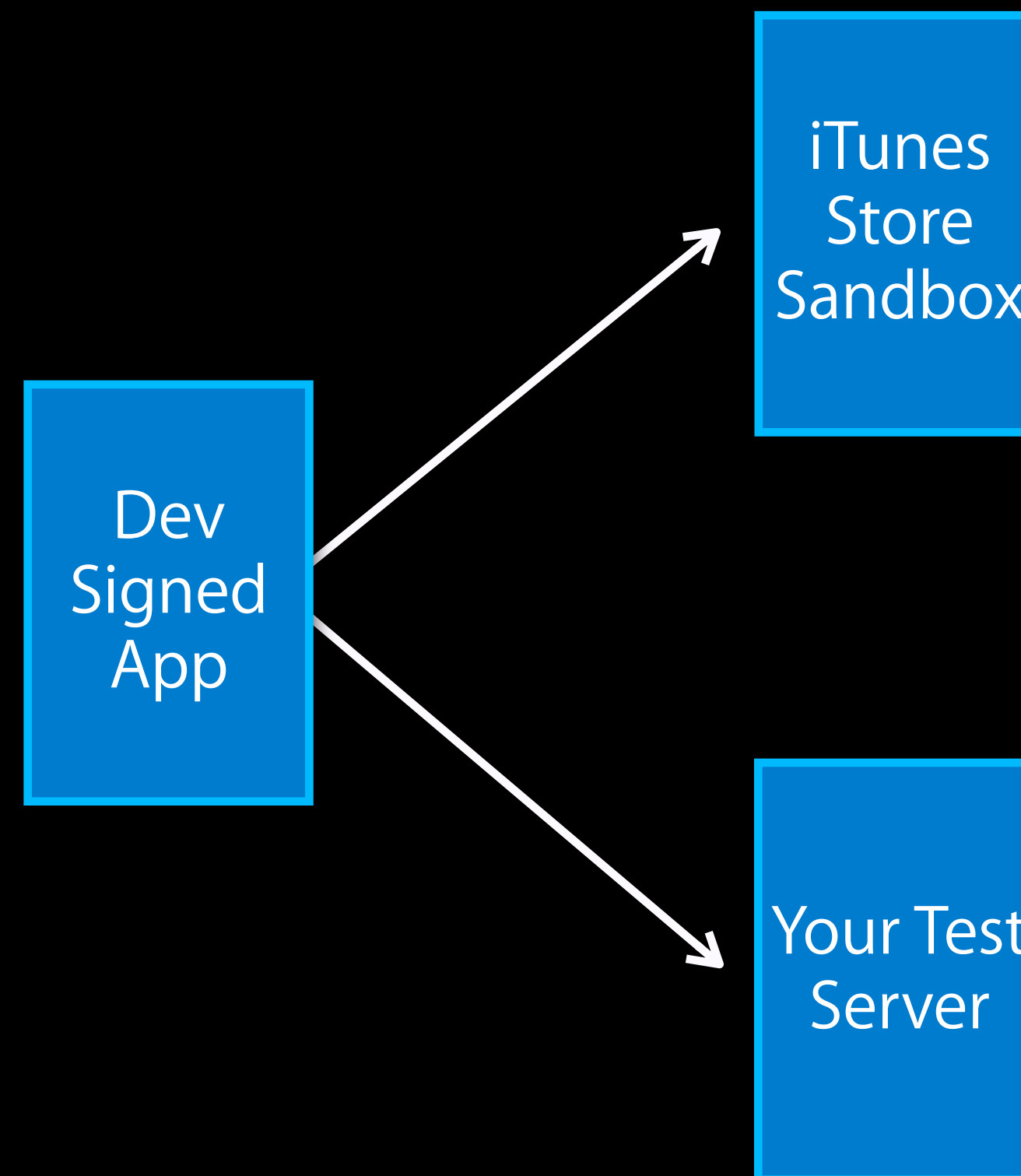
Development





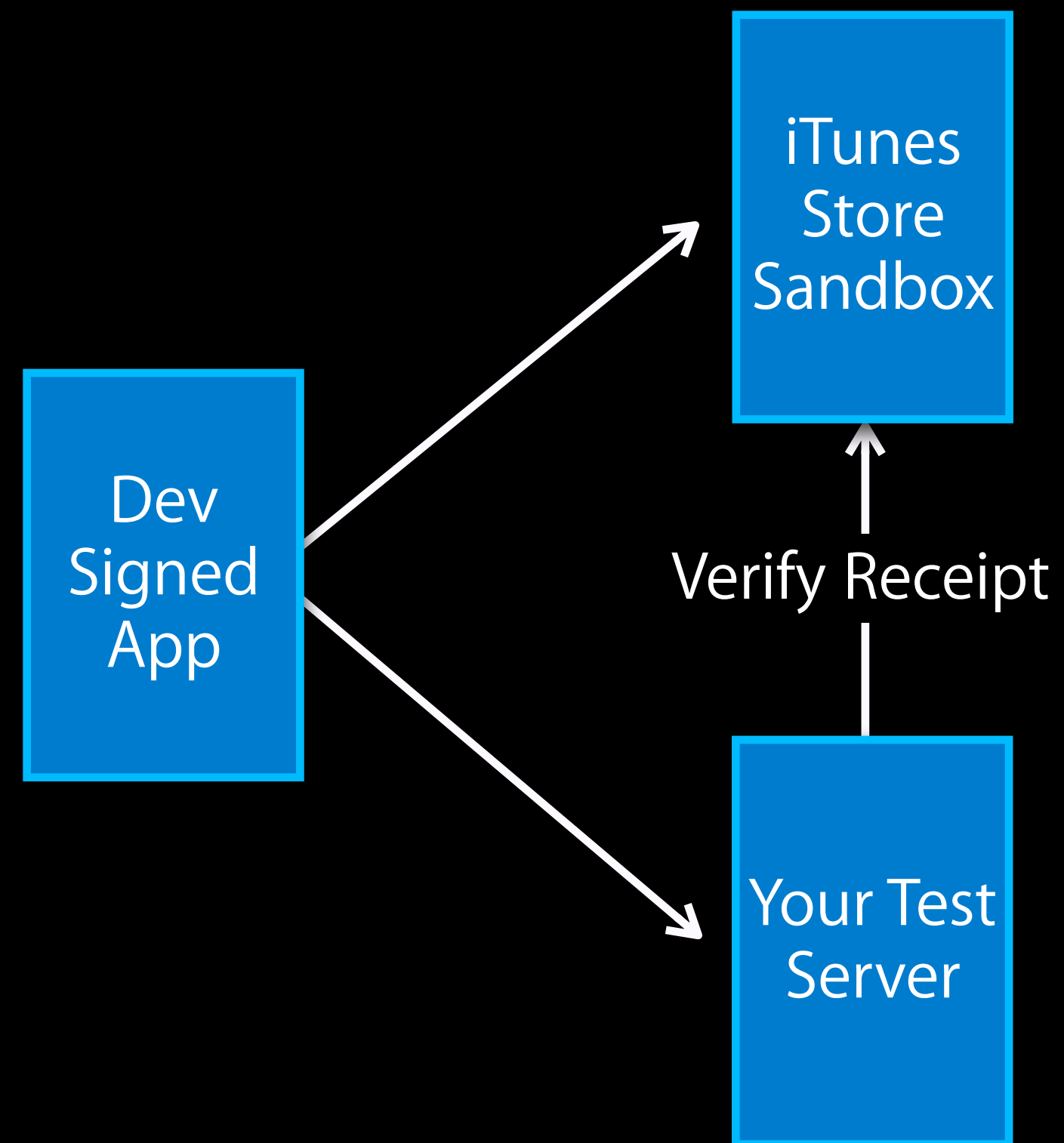
# Verifying Receipt During App Review

## Development



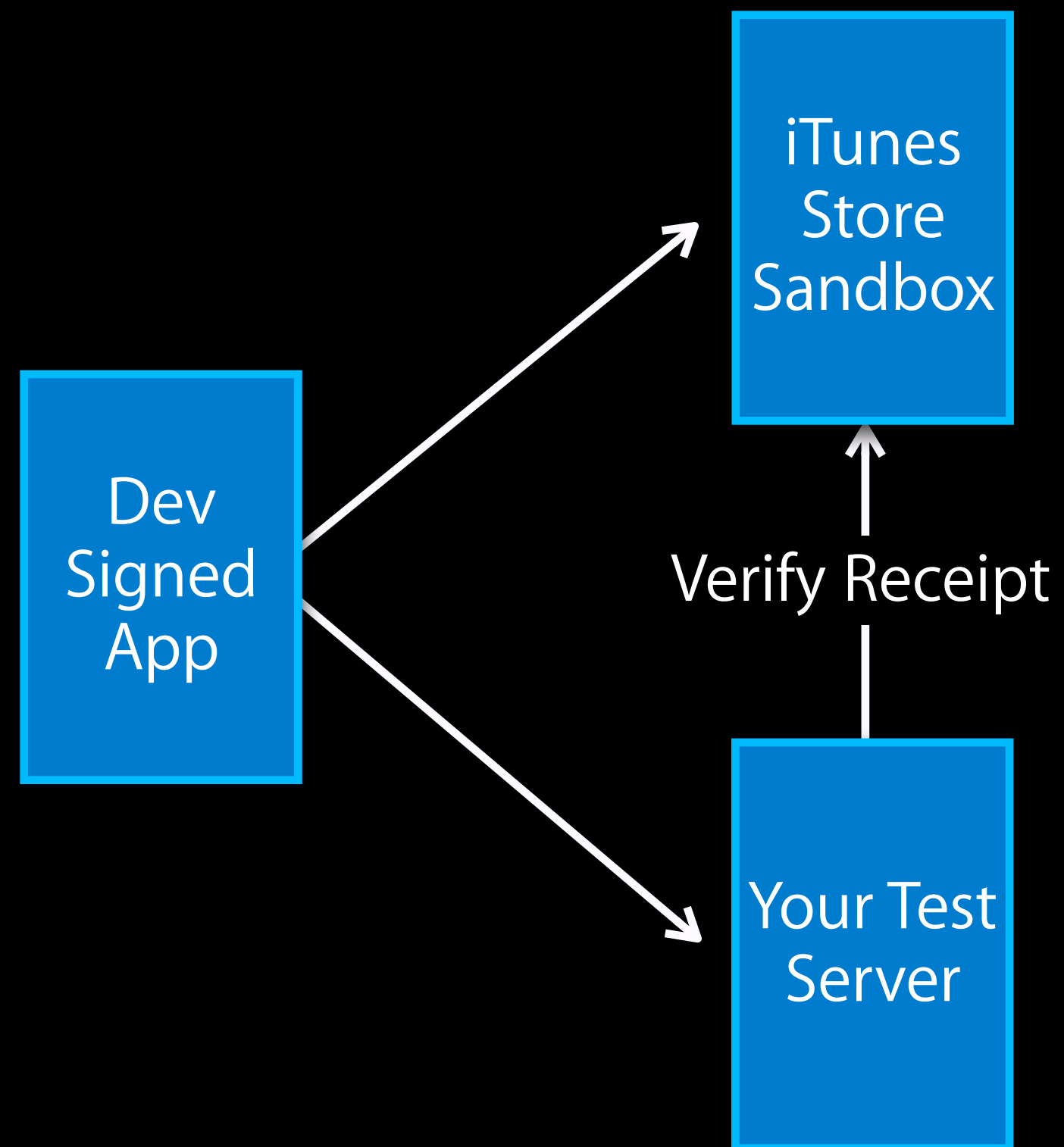
# Verifying Receipt During App Review

## Development

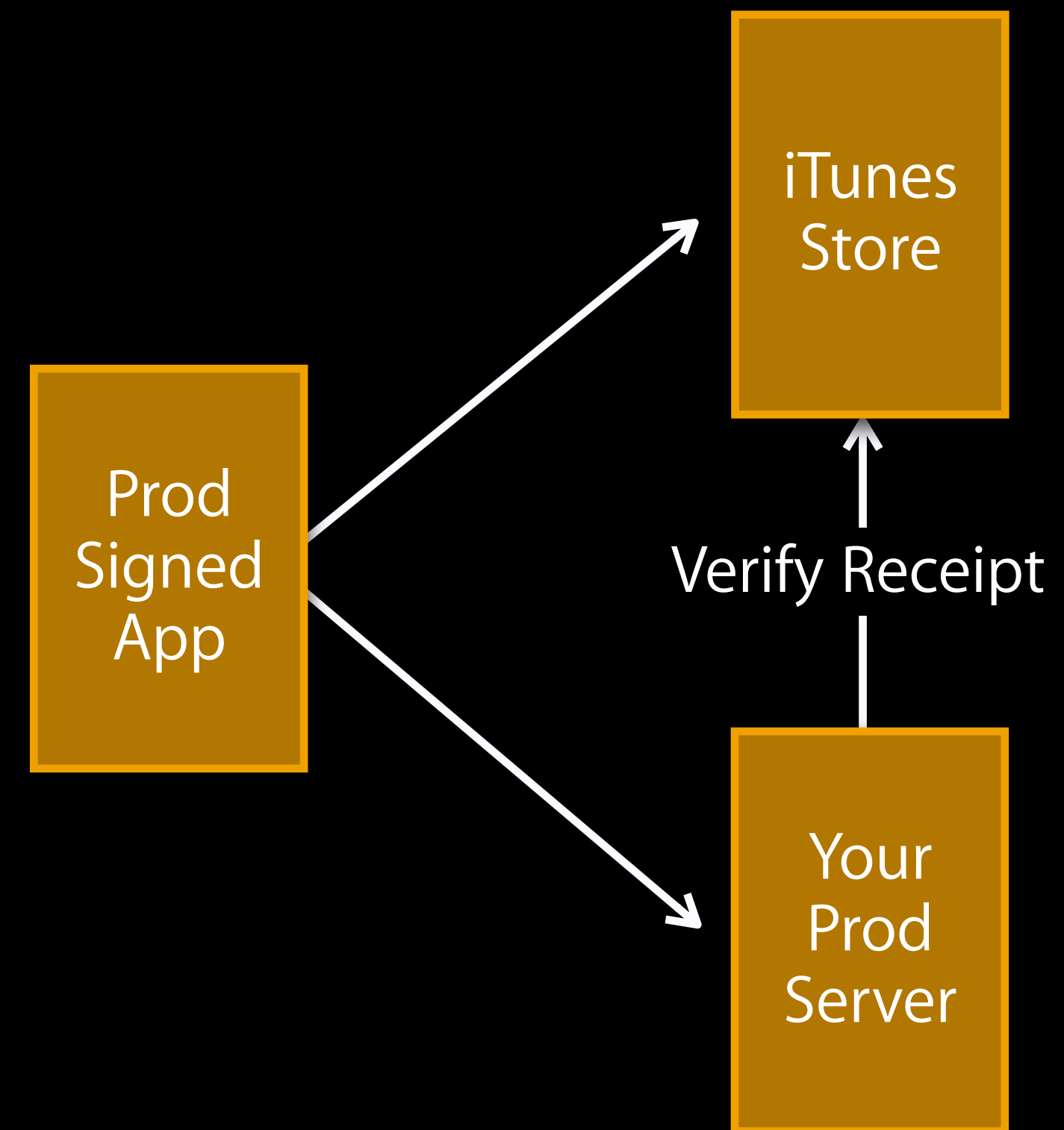


# Verifying Receipt During App Review

## Development

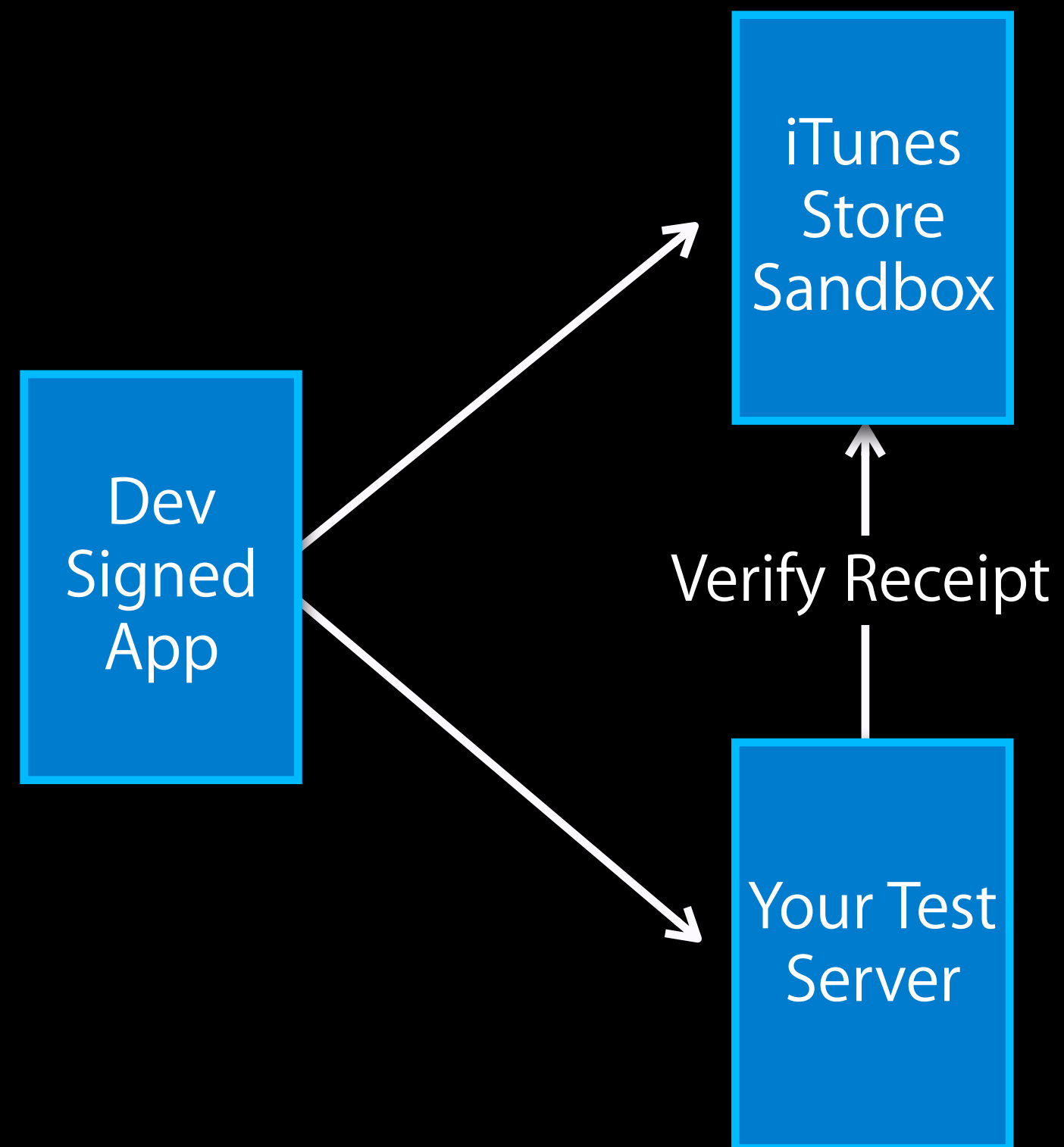


## Production

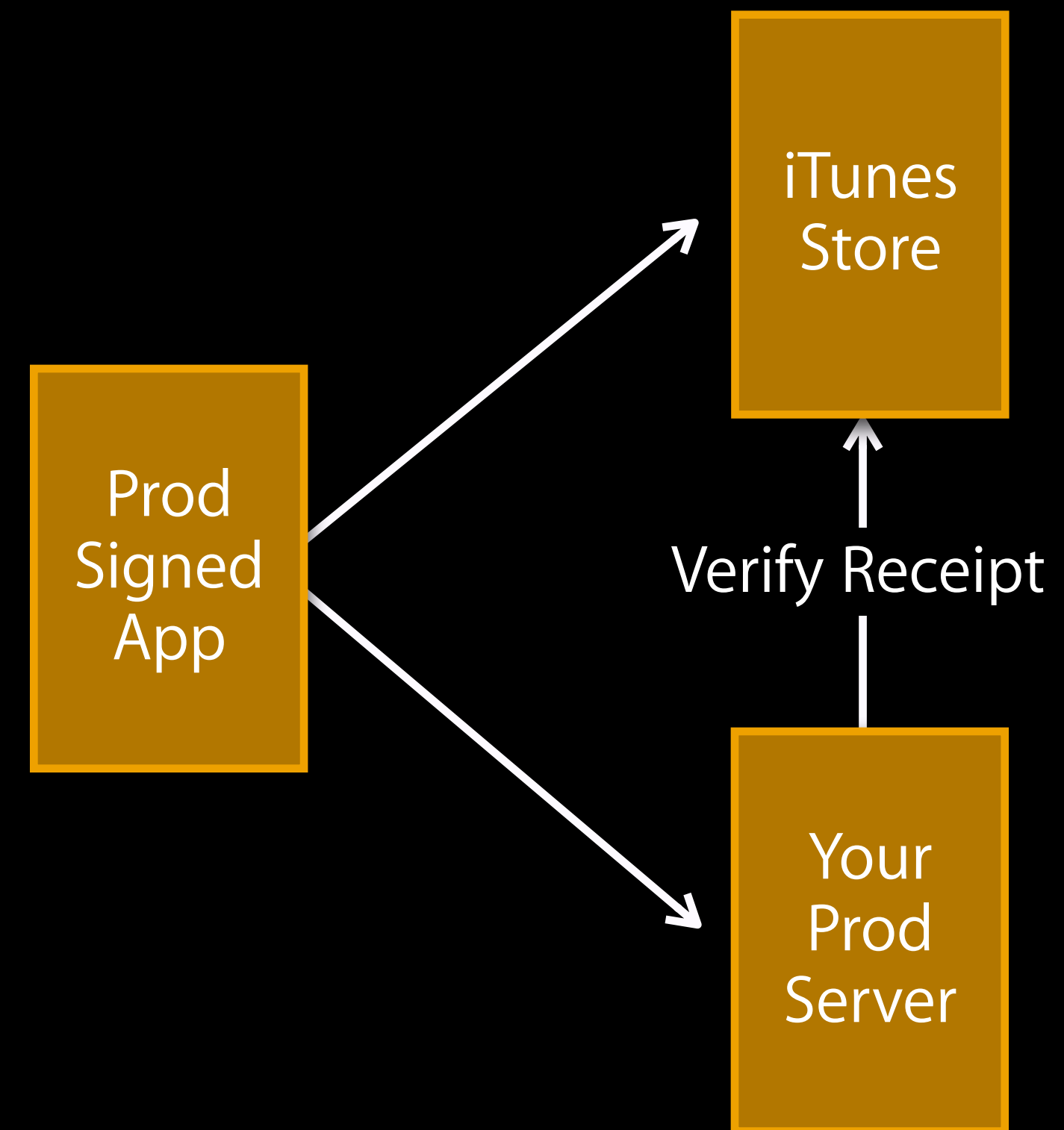


# Verifying Receipt During App Review

## Development

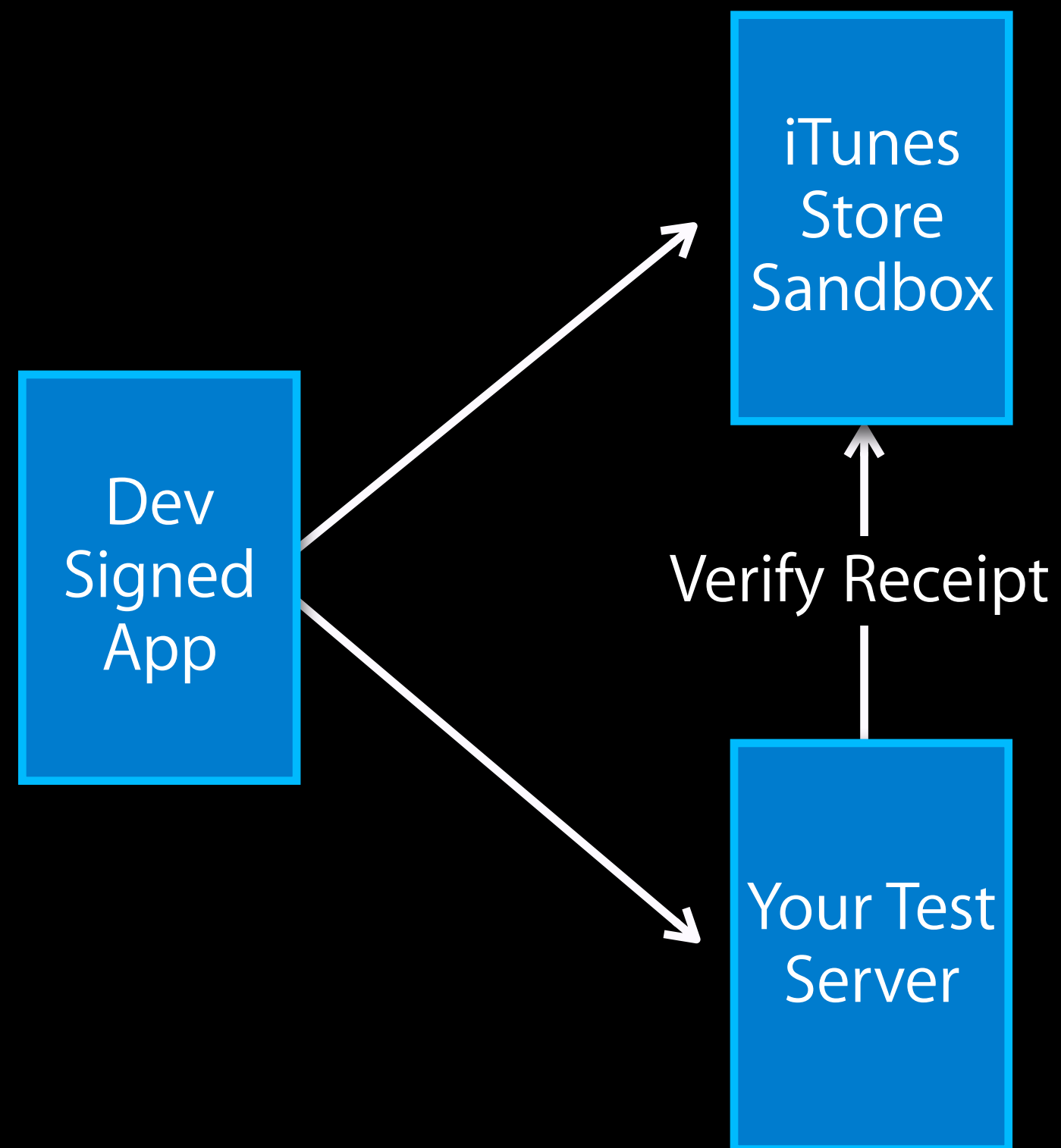


## Production

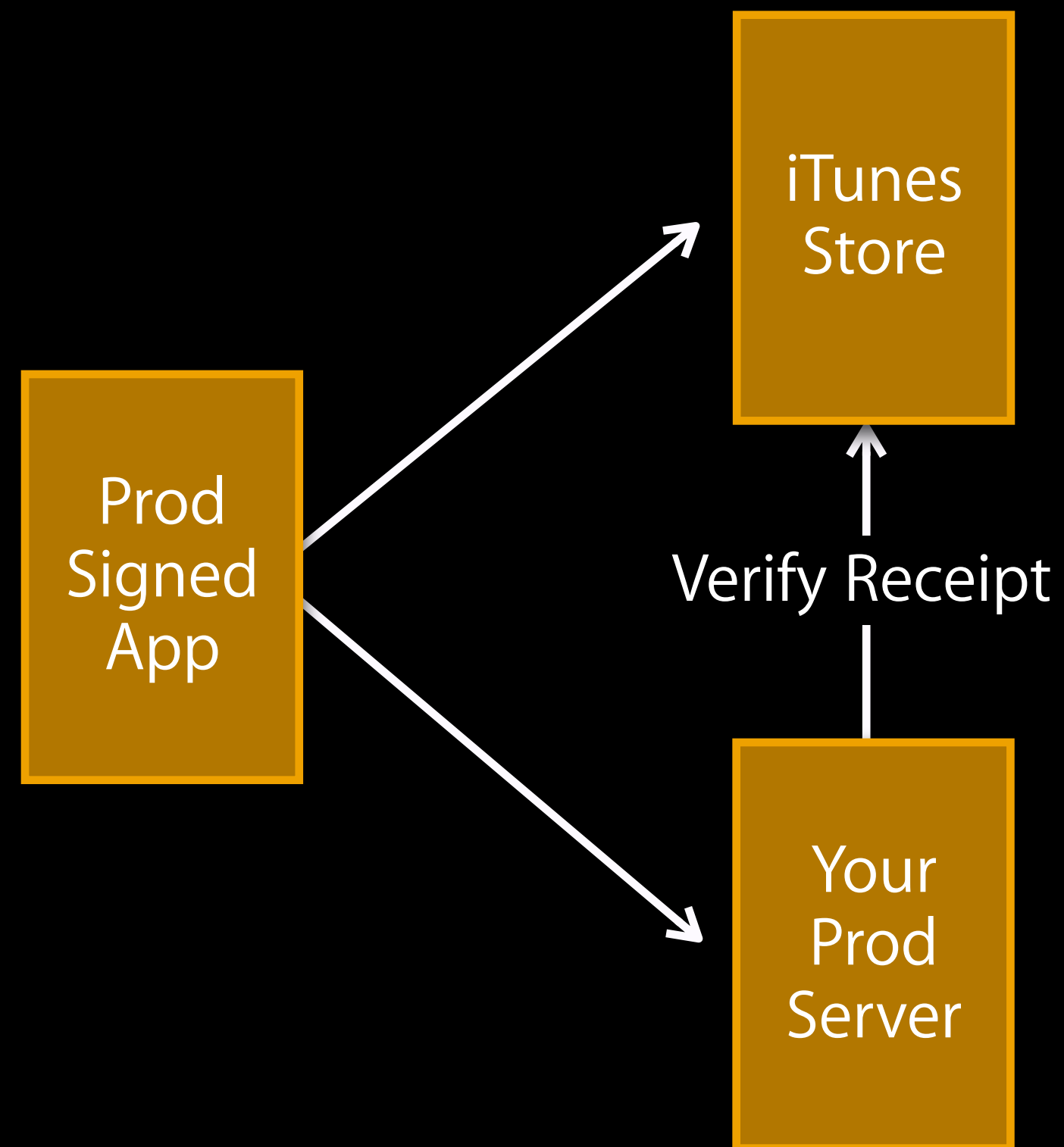


# Verifying Receipt During App Review

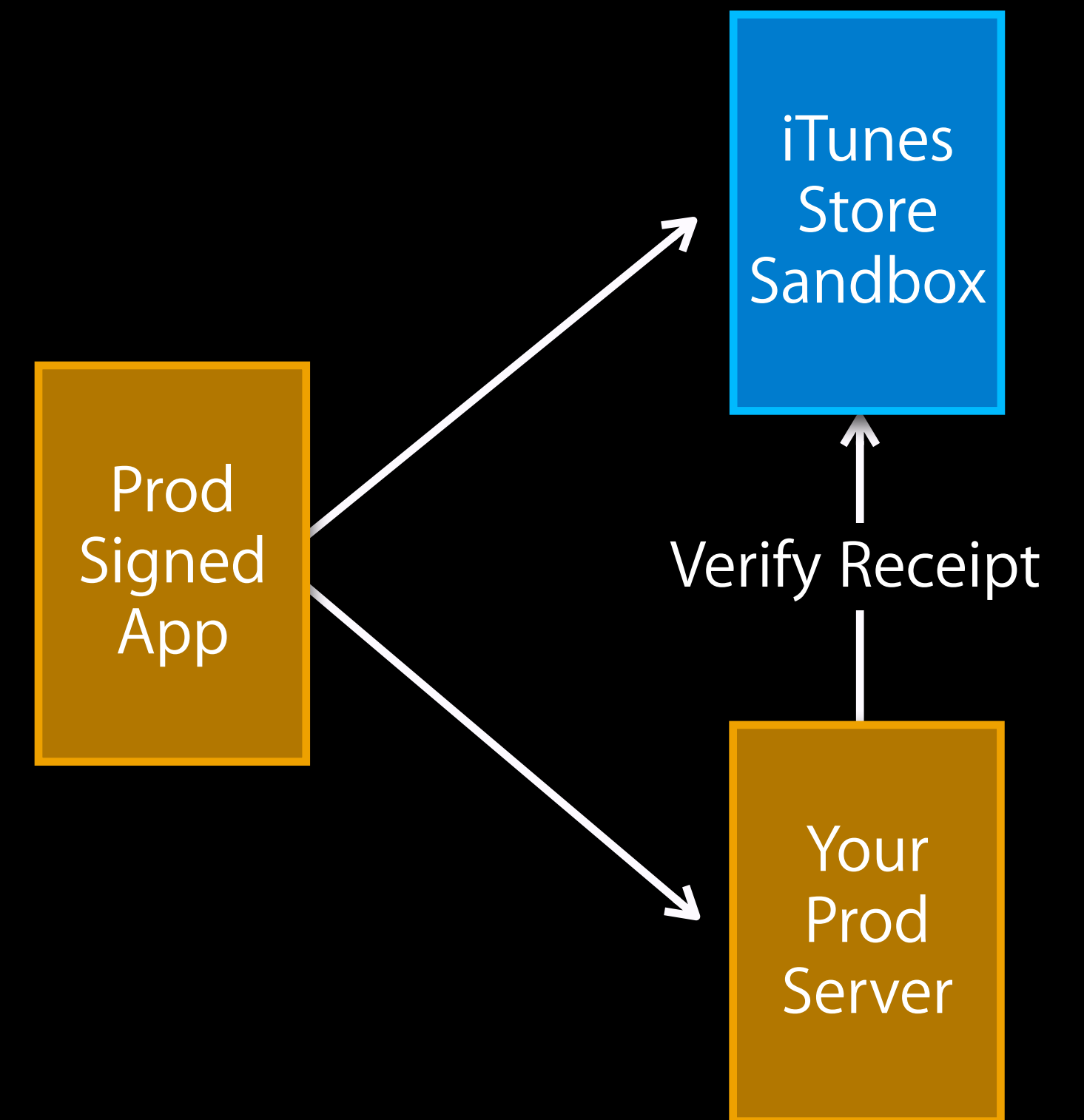
## Development



## Production



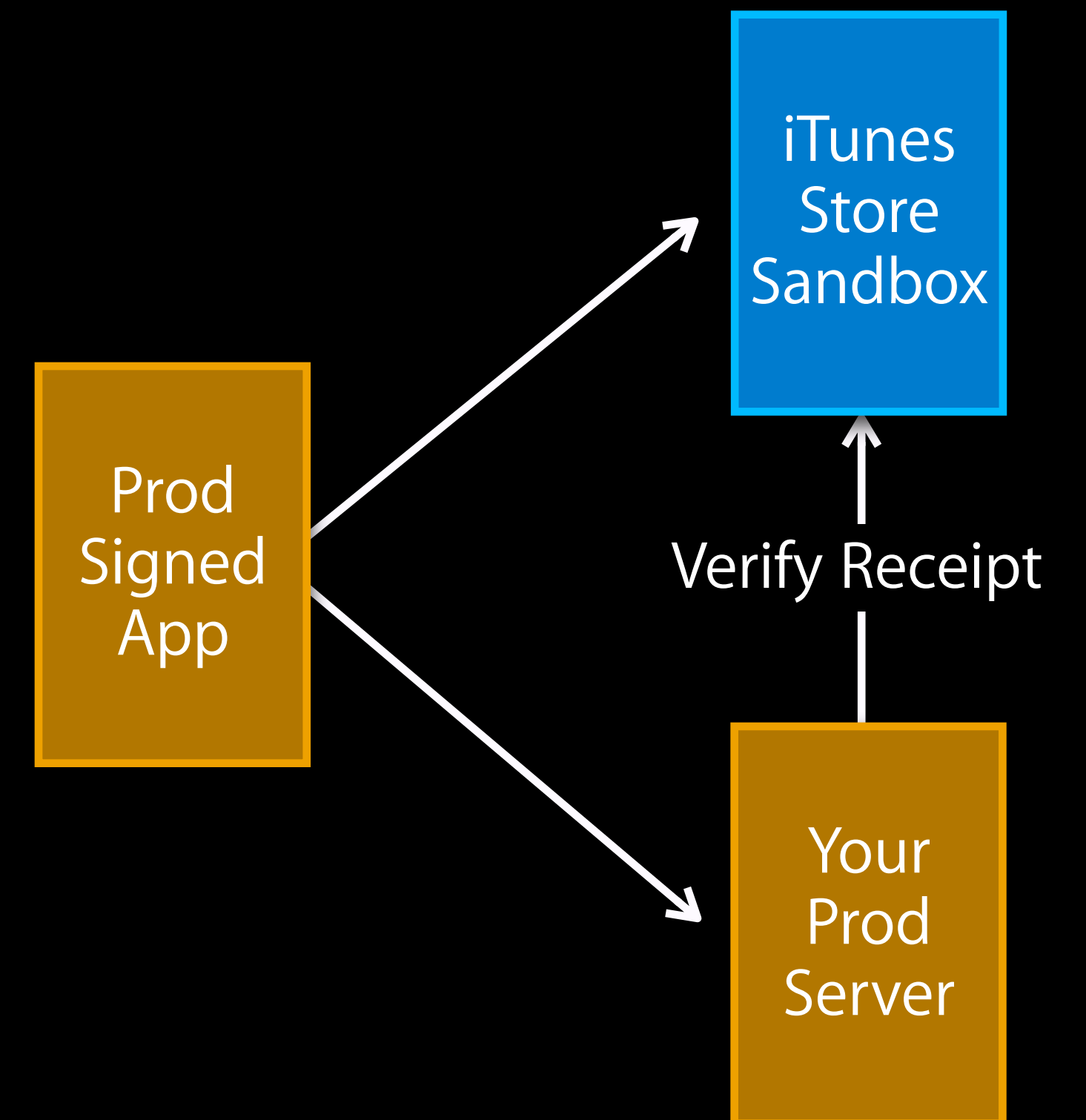
## App Review



# App Review Considerations

- Try the Production environment
- If receipt is from Sandbox, you will receive error **21007**
- Then try against Sandbox

## App Review



# Agenda

What's new in Store Kit

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**Tips for passing app review**

# Tips for Passing App Review

And make your users happy



# Restore Button

- You must have a Restore button
- Should be used only for
  - Non-consumables
  - Auto-renewable subscriptions
- Restore and Purchase should be separate buttons

# Newsstand Apps

- You must indicate a privacy policy URL
- Auto-renewable subscription must be in marketing text
  - Schedule 2, 3.8b
- Free subscriptions are only for free publications
  - Not for temporary promotions
- Even free subscriptions must use a Subscribe button
- Always offer the option to subscribe to your publication

# Auto-Renewable Subscriptions

- You must indicate a privacy policy URL
- Auto-renewable subscription must be in marketing text
  - Schedule 2, 3.8b
- After subscribing, the latest issue must become downloadable
- Paid subscription must provide non-free content
- Apps that offer services should use non-renewing subscriptions

# Non-Renewing Subscriptions

- Asking users to register should be optional
  - Unless you offer account-based features

# Purchases

Purchases

**Purchases must work!**

# Agenda

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# More Information

## Paul Marcos

Application Services Evangelist  
[pmarcos@apple.com](mailto:pmarcos@apple.com)

## Documentation

In-App Purchase Programming Guide  
Receipt Validation Programming Guide  
Search <http://developer.apple.com>

## Apple Developer Forums

<http://devforums.apple.com>



# Labs

Store Kit and Receipts Lab	Services Lab B Thursday 3:15PM	
App Store Lab	Level 3 Thursday until 6:00PM Friday 9:00AM to 12:00PM	
iTunes Connect Lab	Services Lab B Thursday 11:30AM	
iTunes Connect Lab	Services Lab B Friday 10:15AM	

 WWDC2013