

What's New in Apple Push Notification Service

Session 724

Mayur Mahajan Apple Push Notification Service Engineer

Review

HTTP/2 provider API

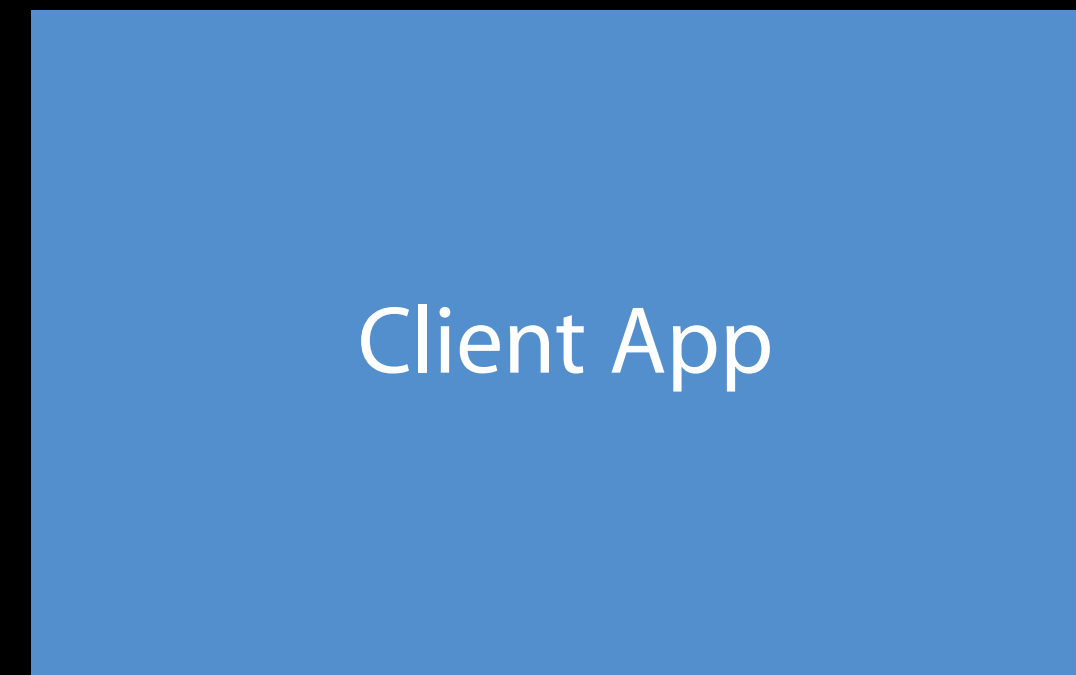
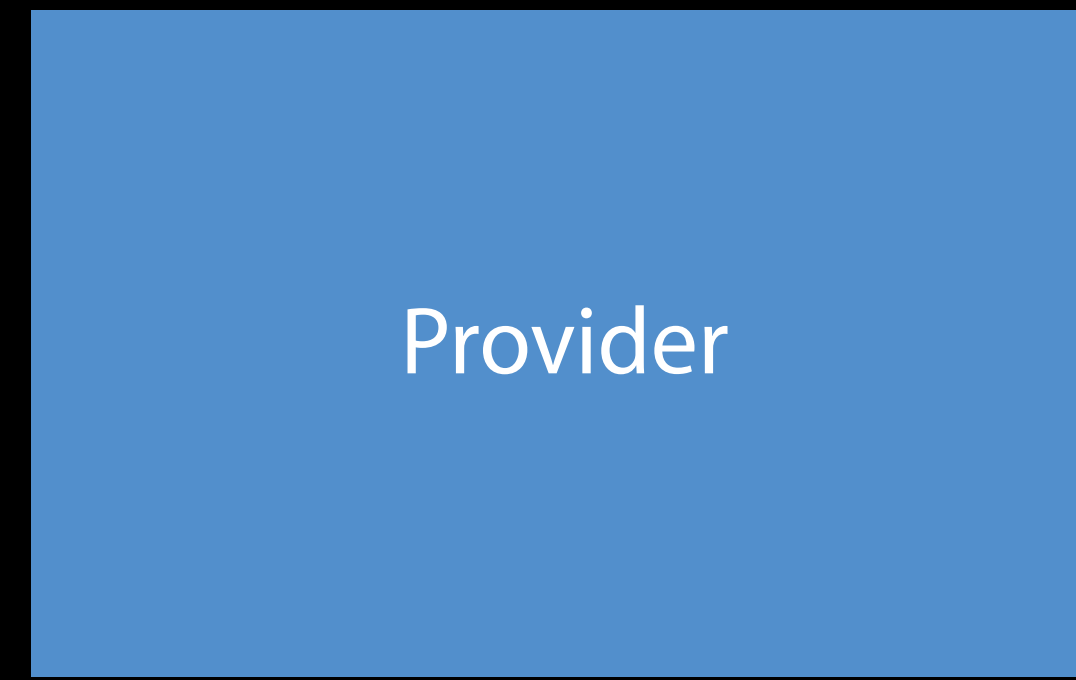
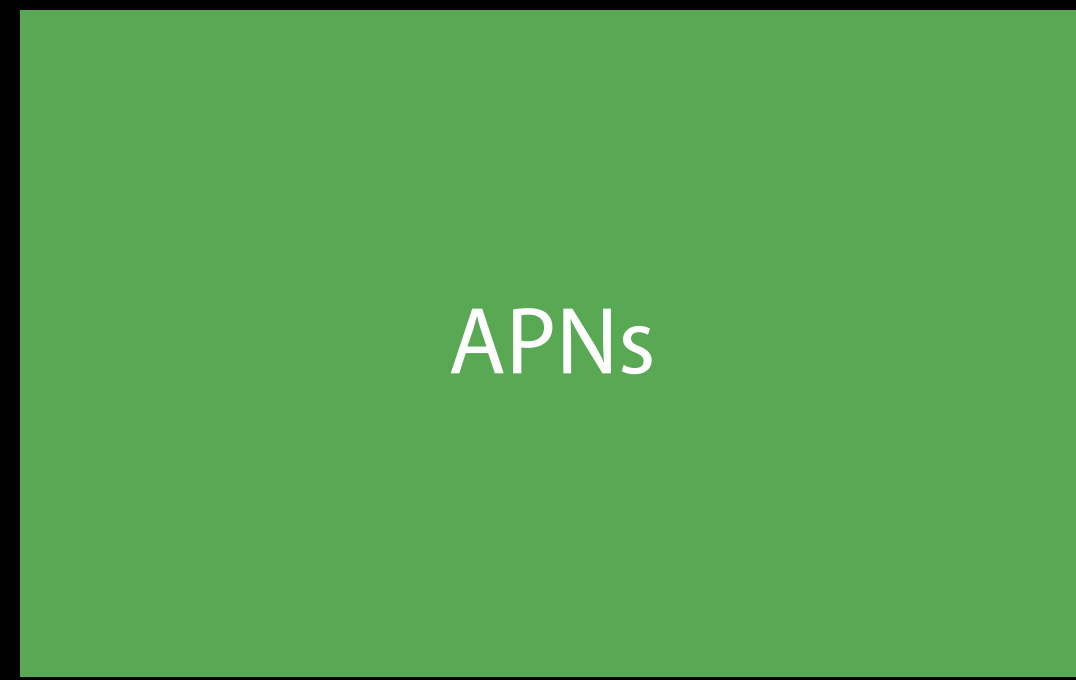
Instant feedback

Larger payload

Simplified certificate handling

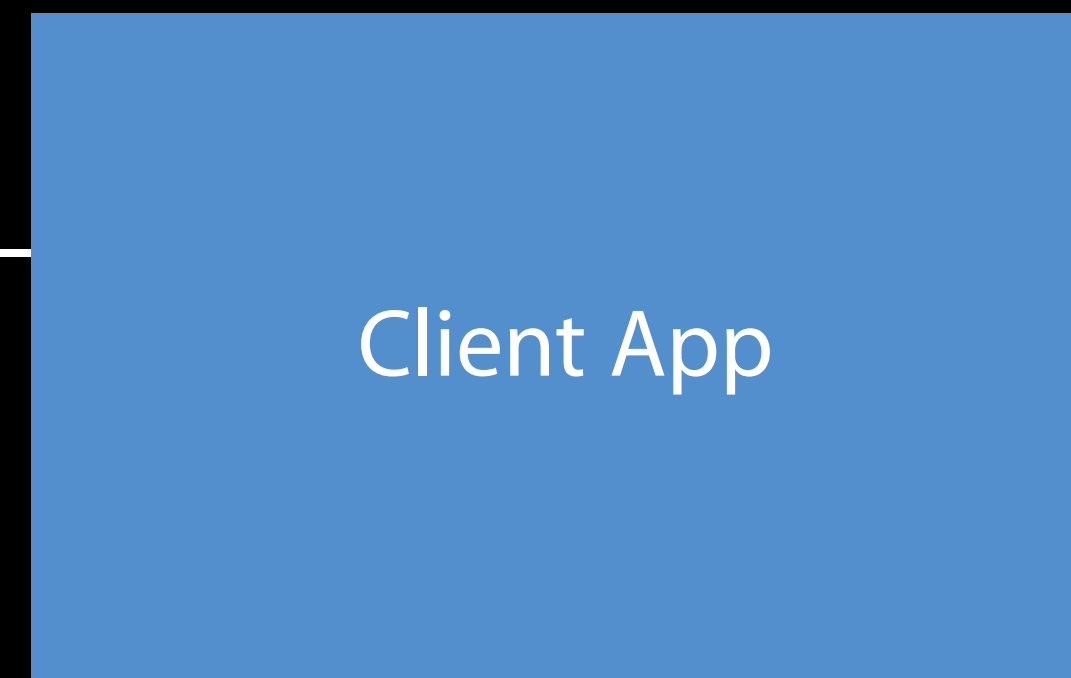
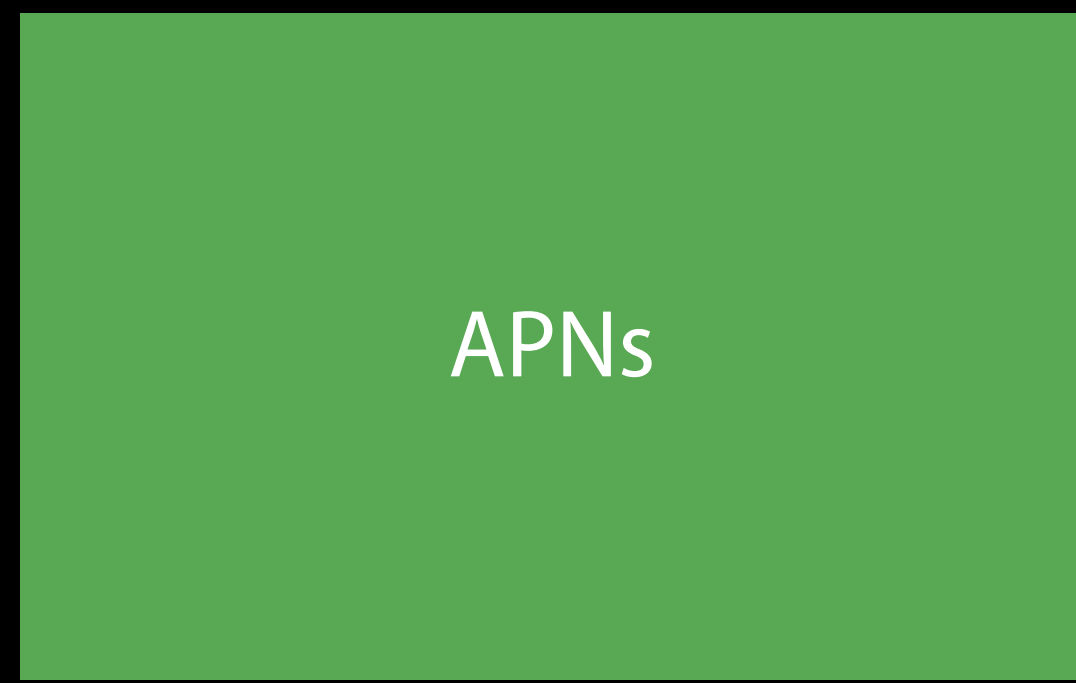
HTTP/2 Provider API

Sending notifications



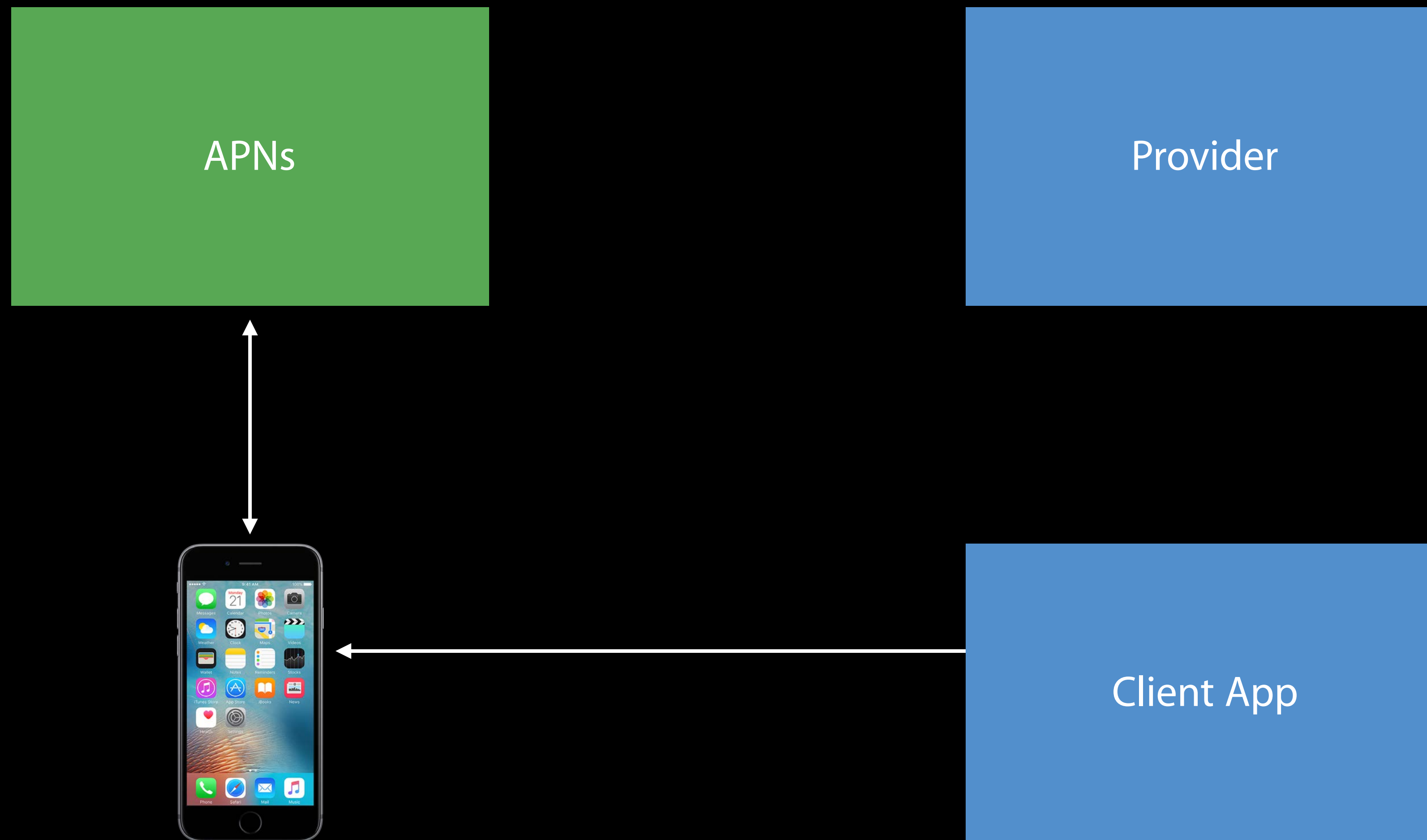
HTTP/2 Provider API

Sending notifications



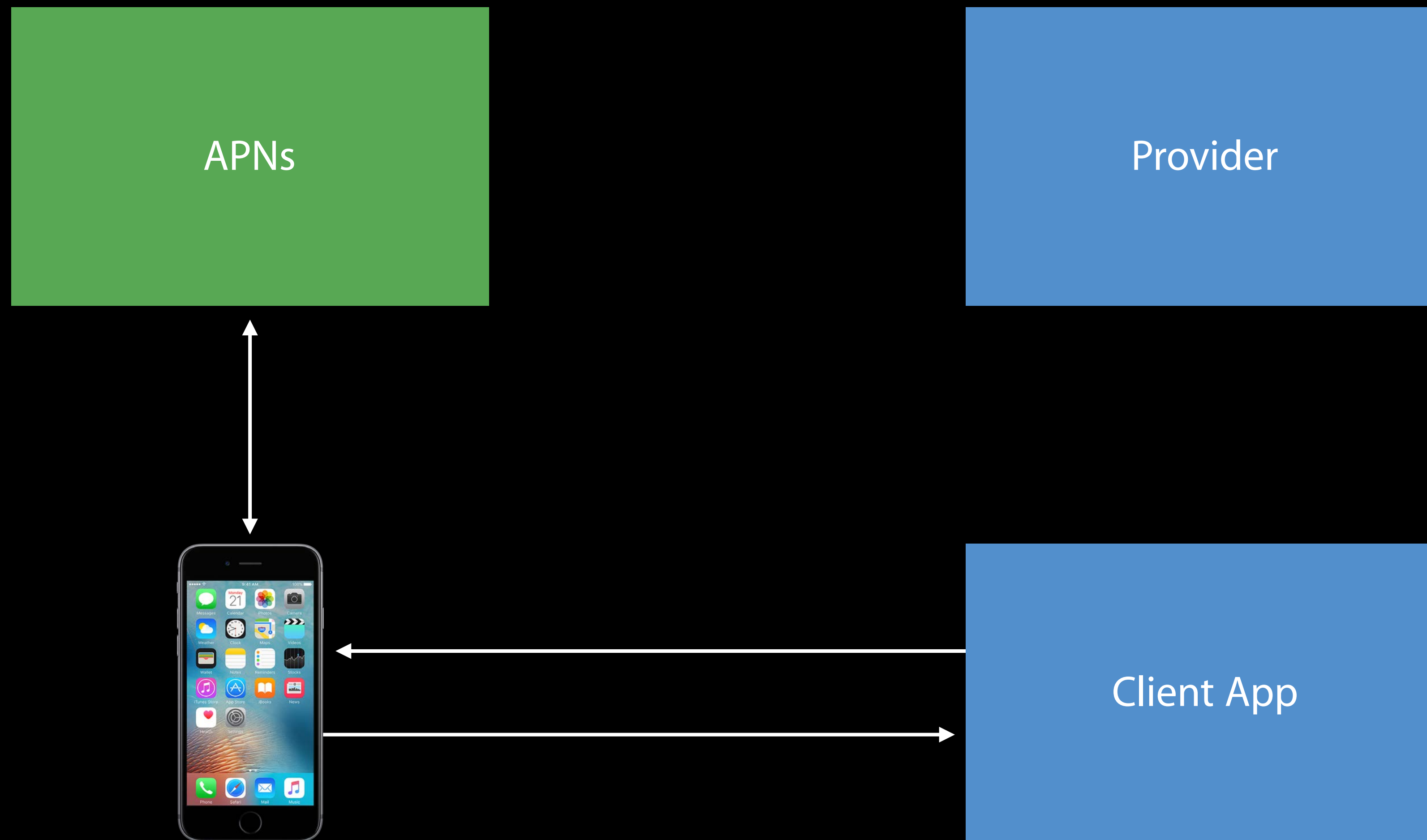
HTTP/2 Provider API

Sending notifications



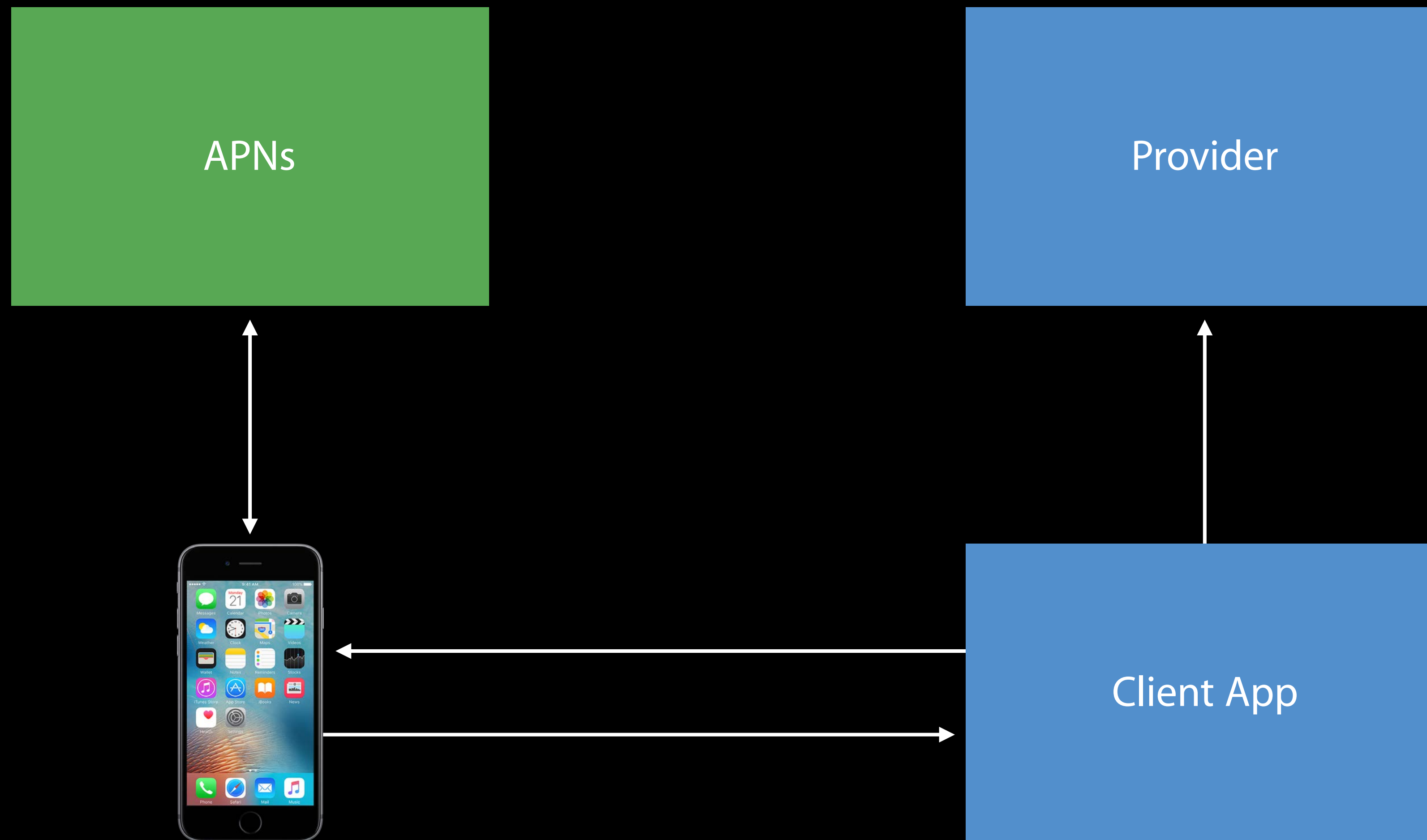
HTTP/2 Provider API

Sending notifications



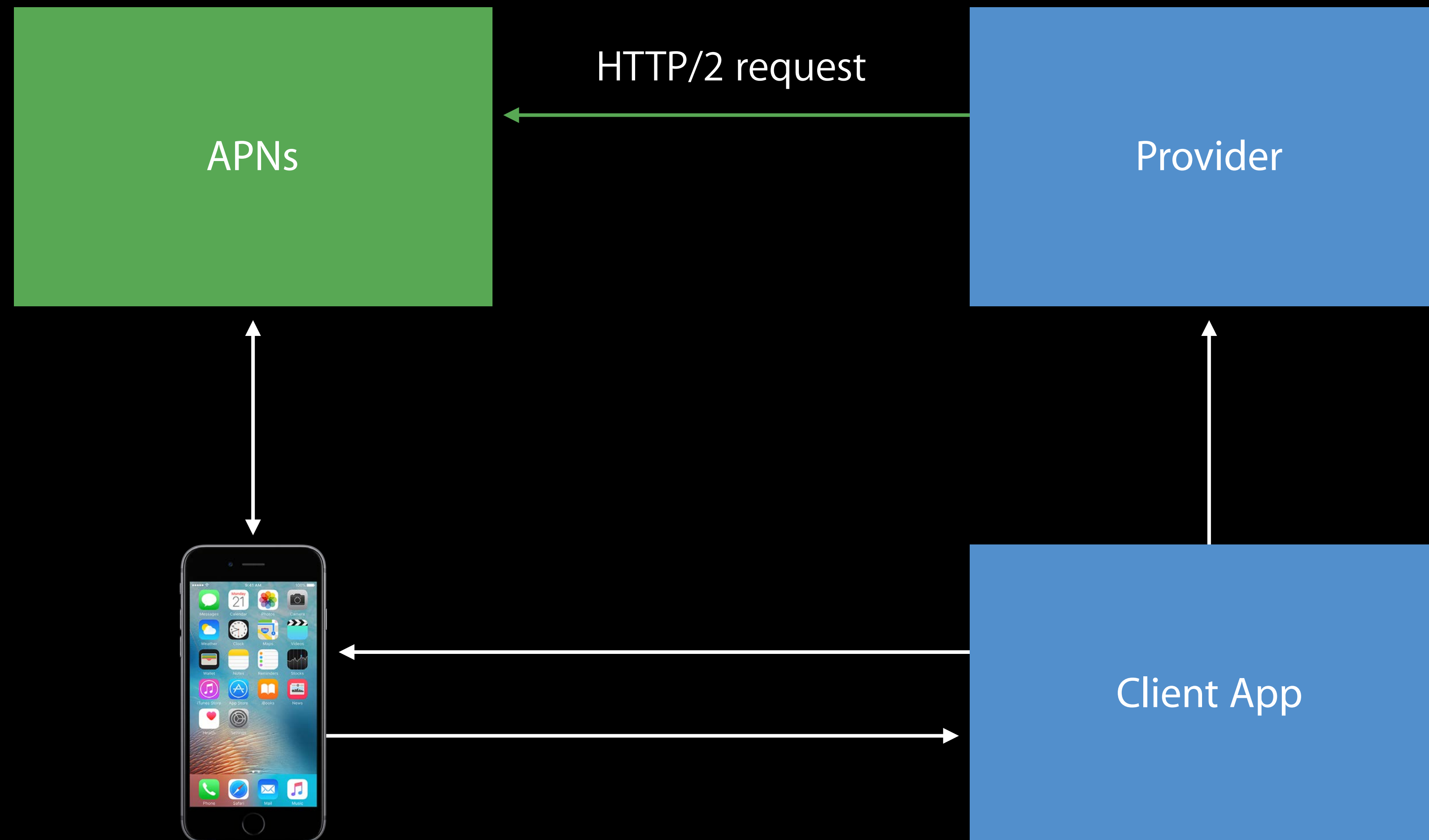
HTTP/2 Provider API

Sending notifications



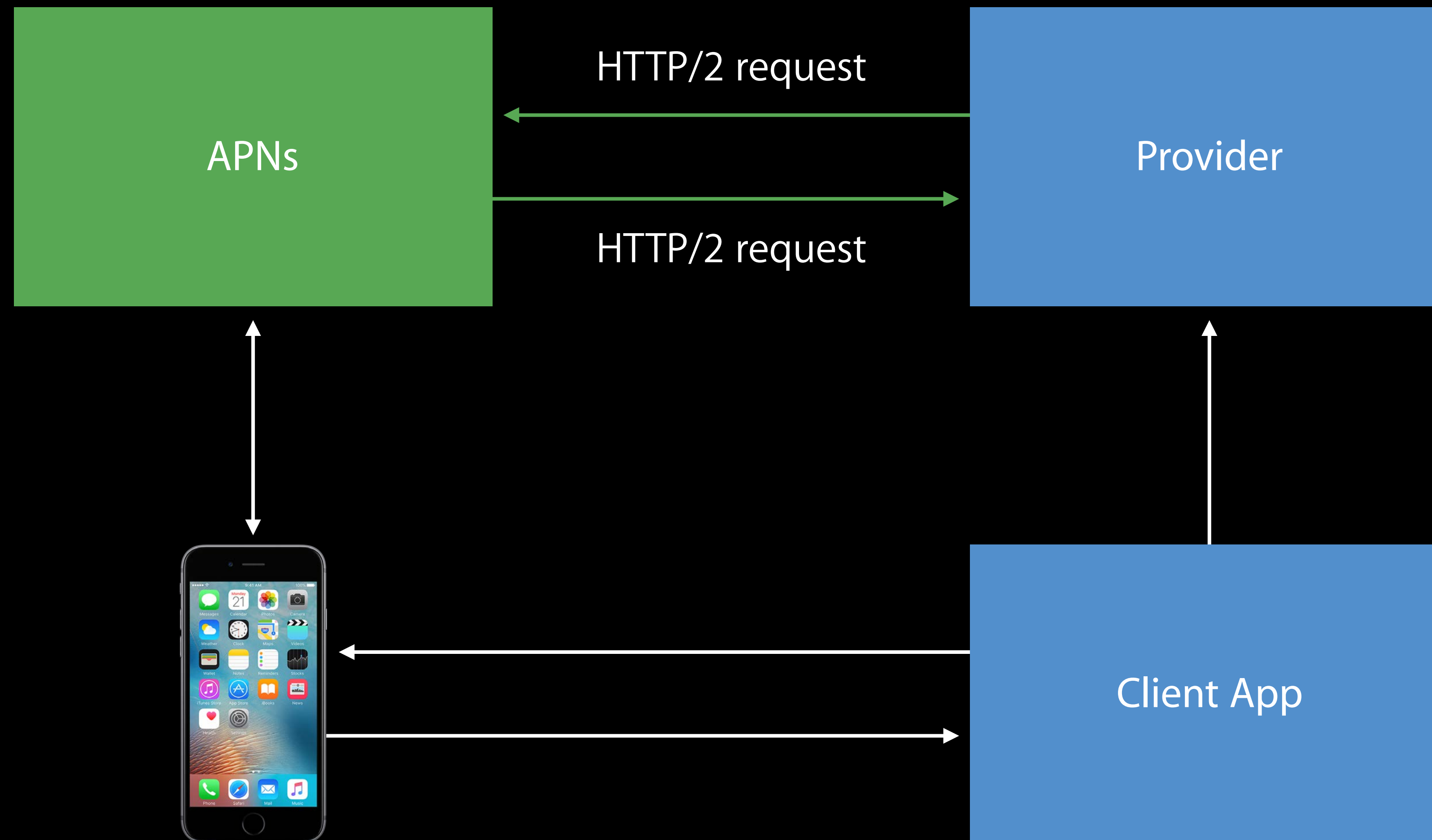
HTTP/2 Provider API

Sending notifications



HTTP/2 Provider API

Sending notifications



Simplified Certificate Handling

Application push

VoIP push

Complication push

Development and production environment

NEW

Token Authentication

Token Authentication

Token Authentication

Simplified provider authentication when connecting to APNs

Secure

Easy to generate

No more expired certificates!

Certificate Authentication

Connecting to APNs with client certificate



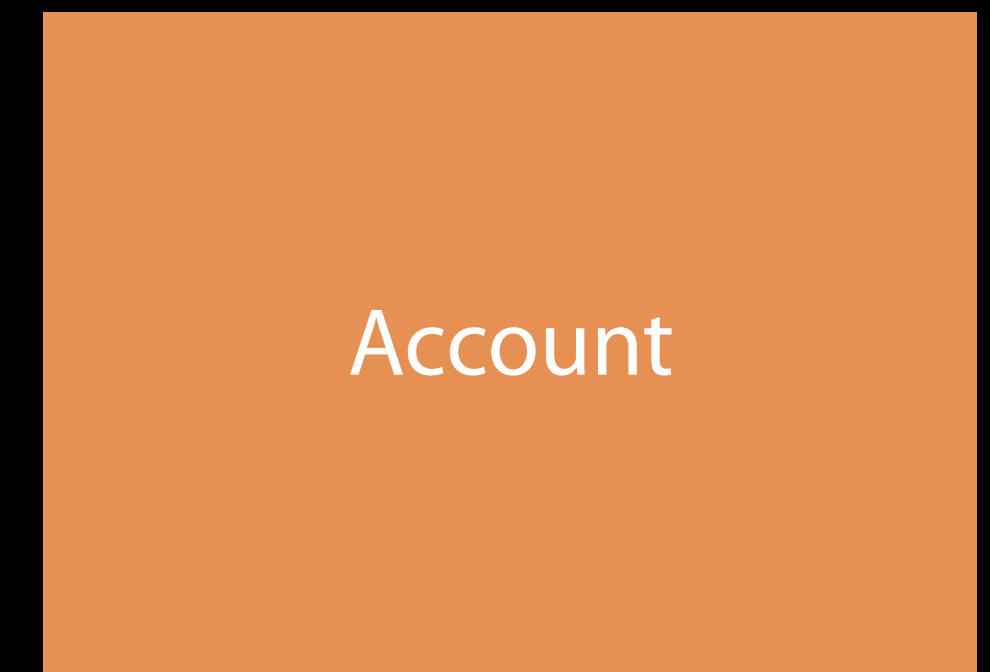
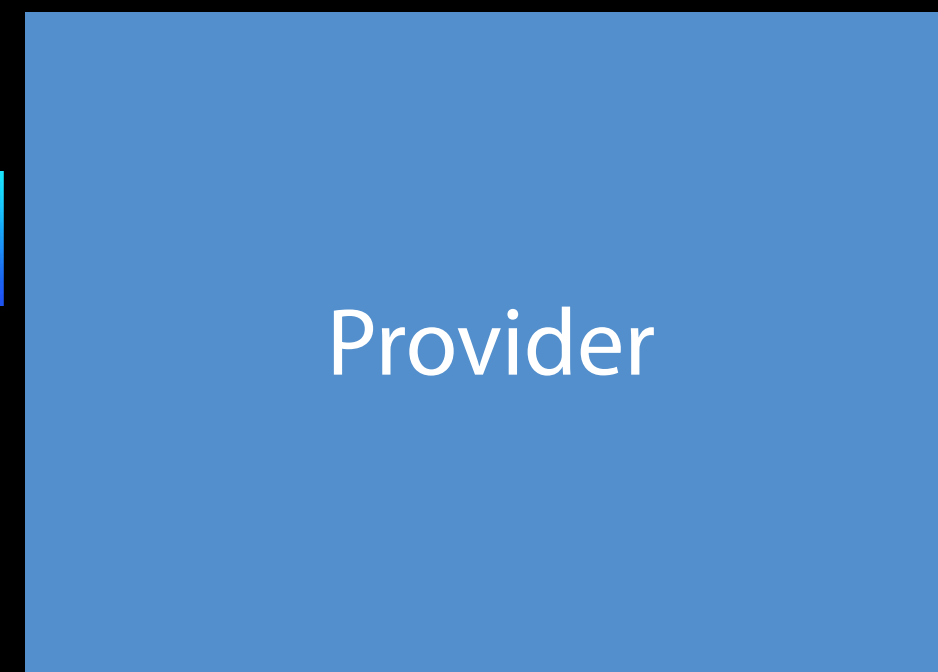
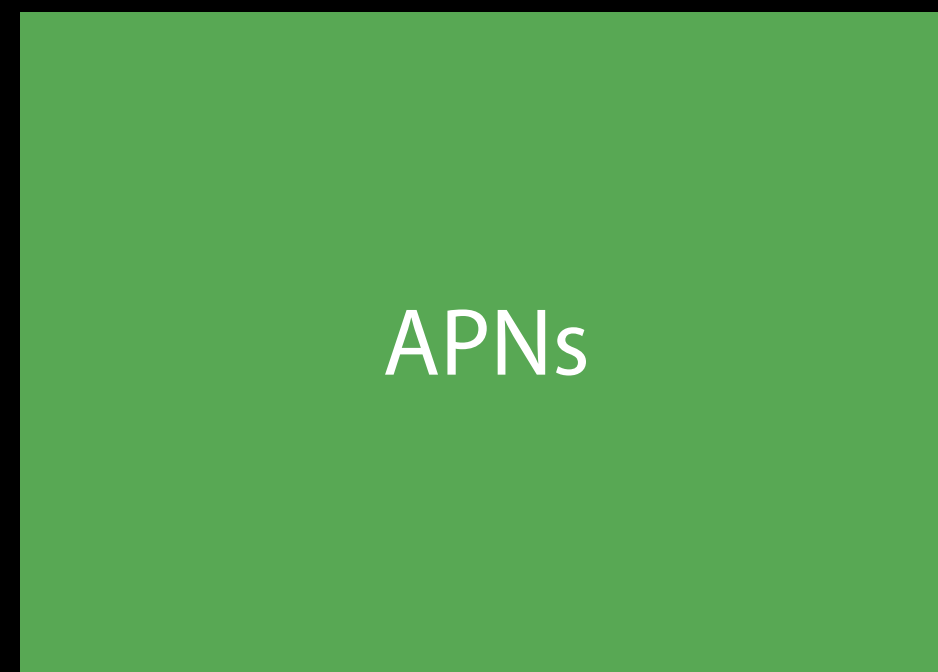
APNs

Provider

Account

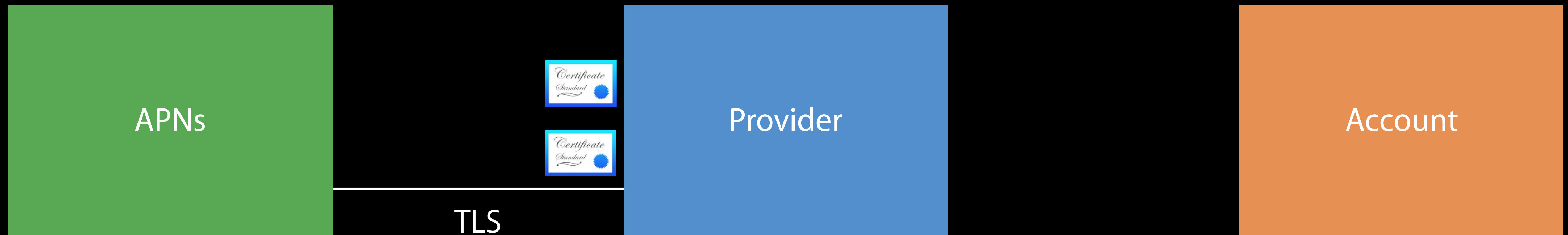
Certificate Authentication

Connecting to APNs with client certificate



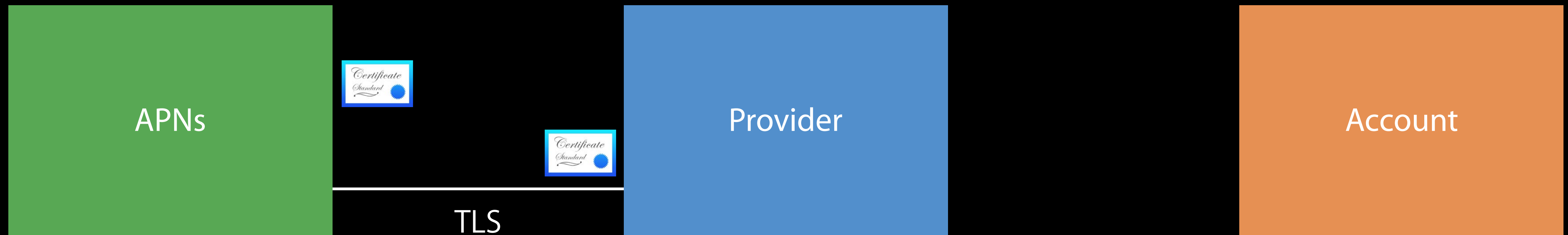
Certificate Authentication

Connecting to APNs with client certificate



Certificate Authentication

Connecting to APNs with client certificate



Token Authentication

Connecting to APNS with Token Authentication



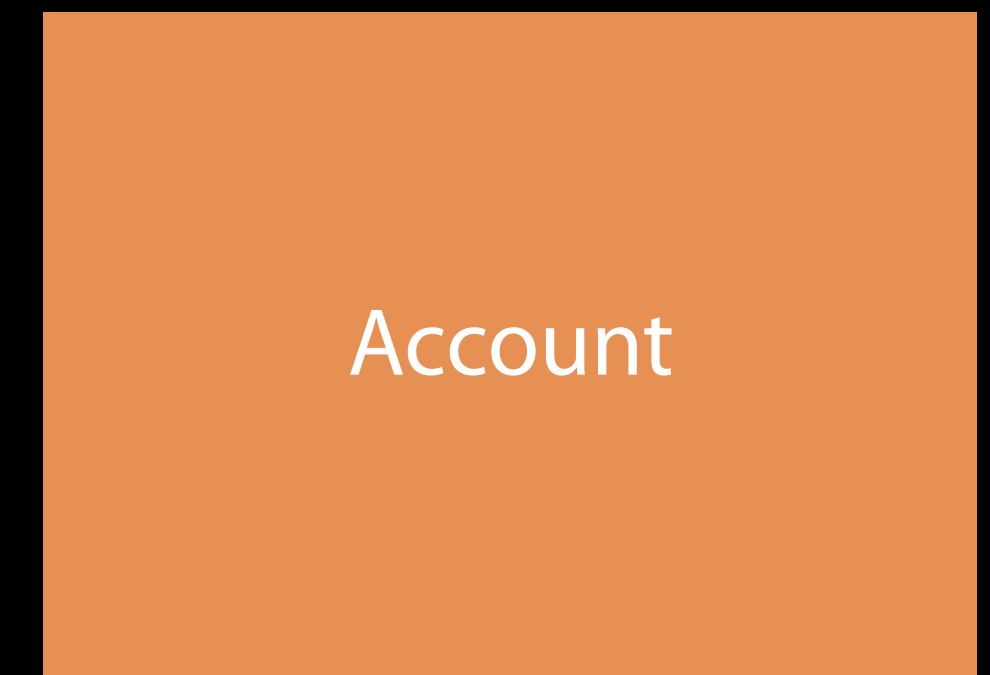
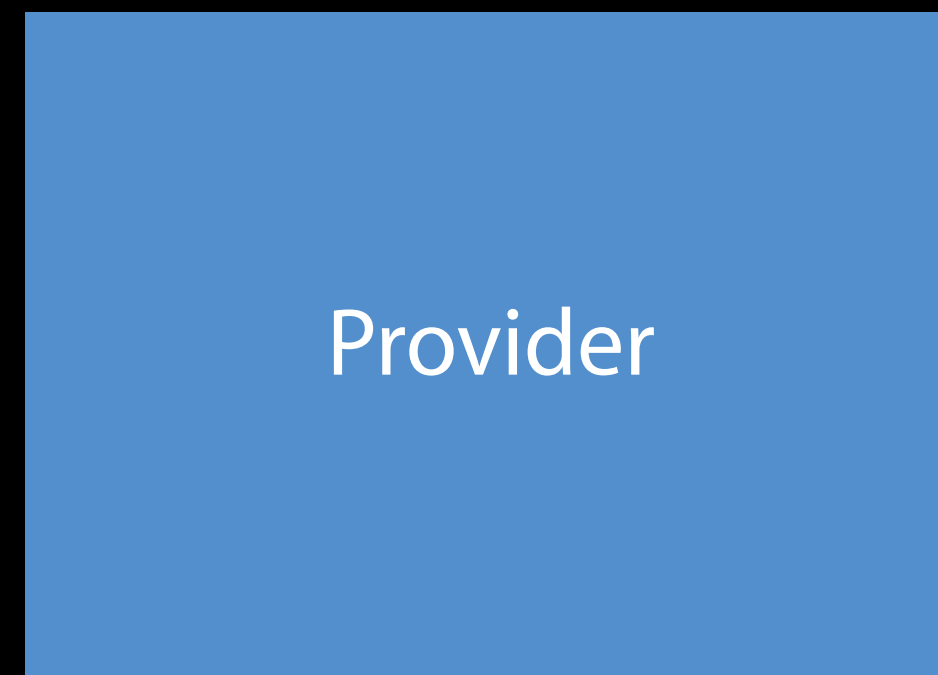
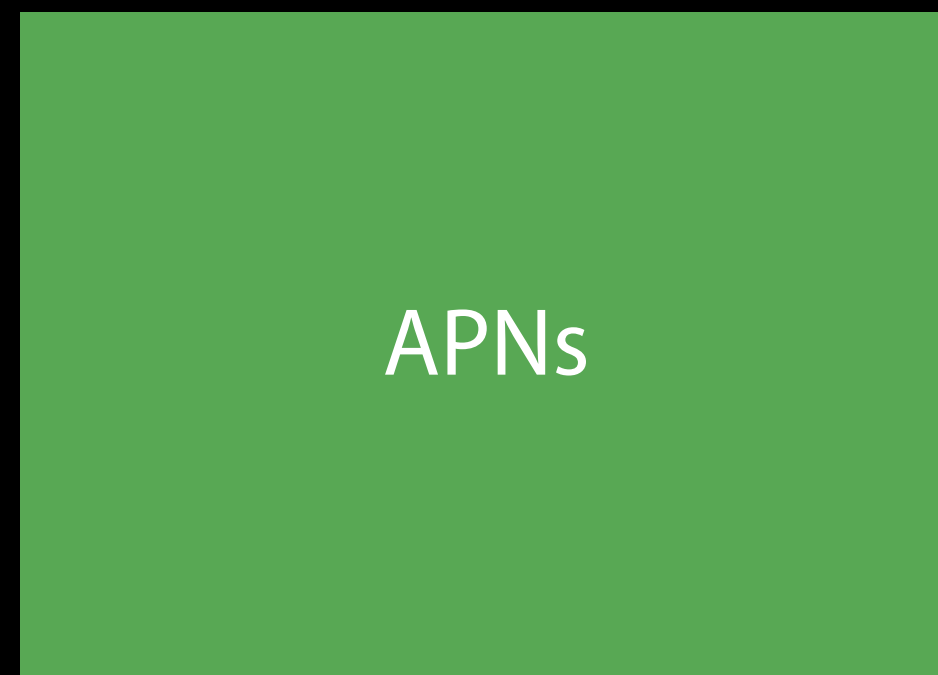
APNs

Provider

Account

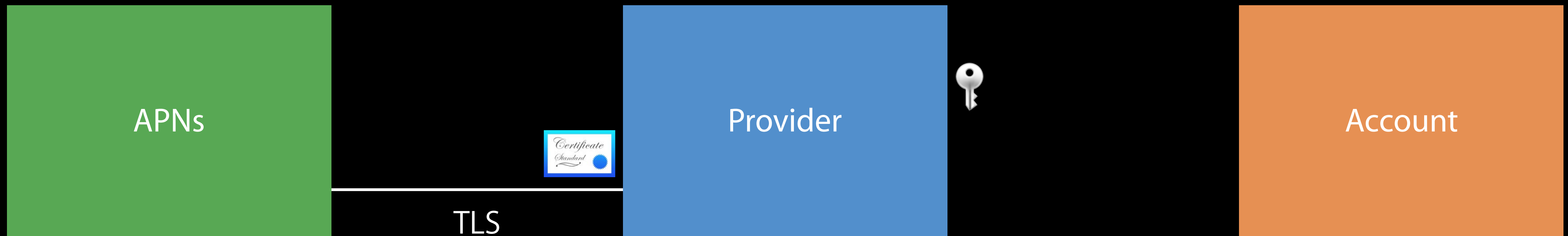
Token Authentication

Connecting to APNS with Token Authentication



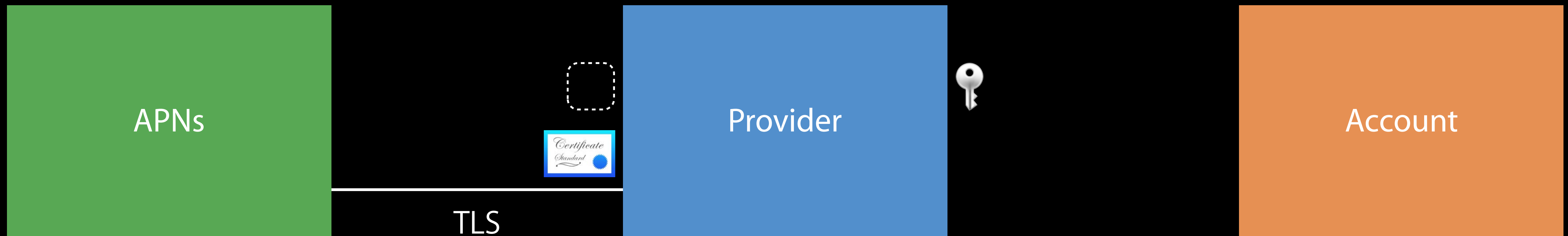
Token Authentication

Connecting to APNS with Token Authentication



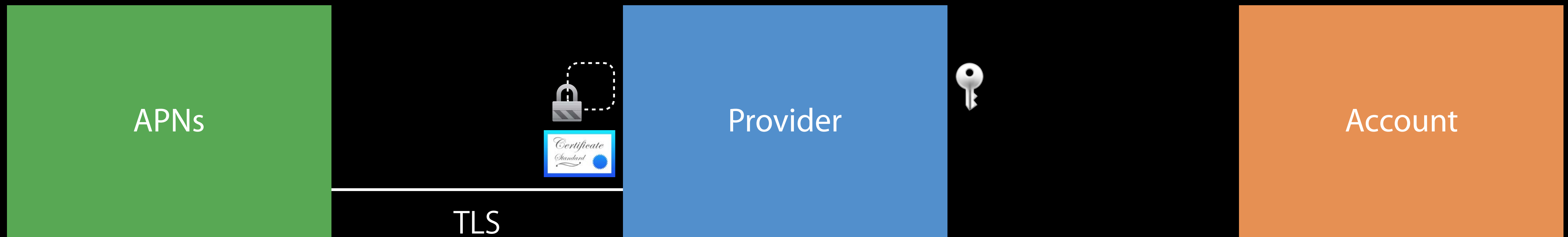
Token Authentication

Connecting to APNS with Token Authentication

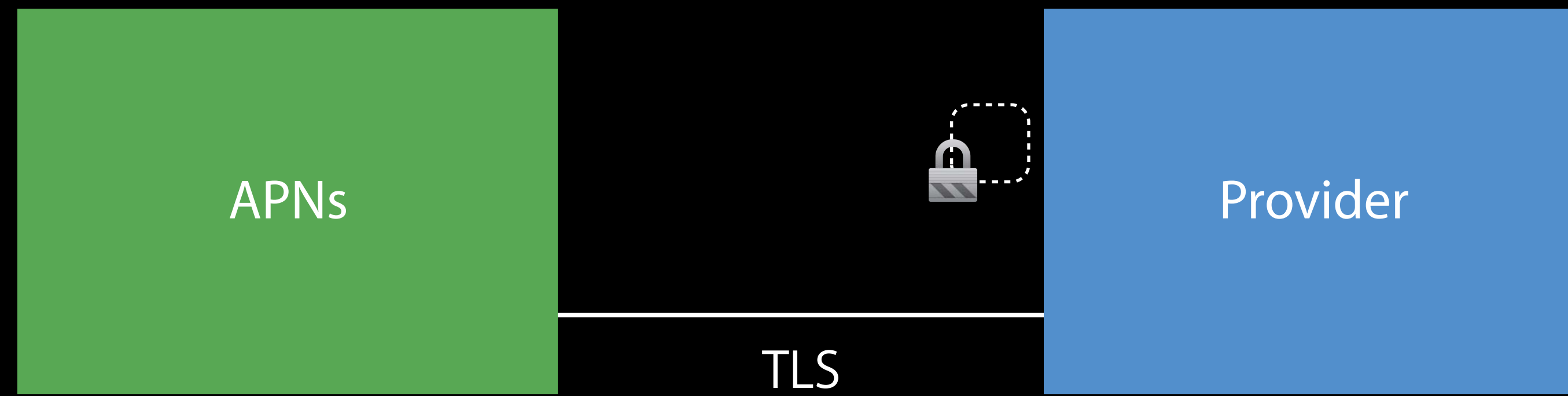


Token Authentication

Connecting to APNS with Token Authentication



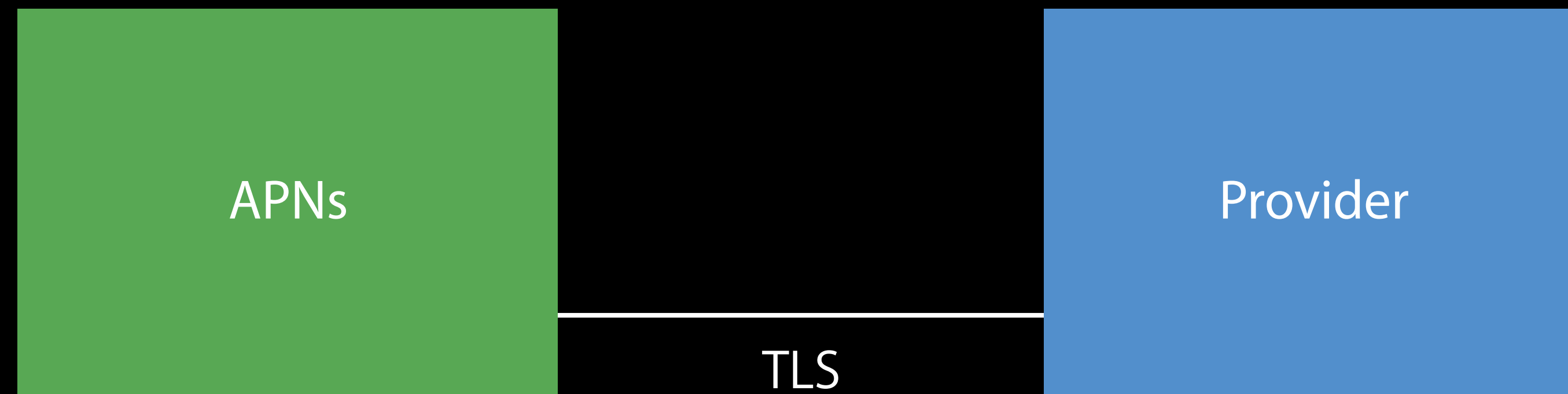
Token Authentication



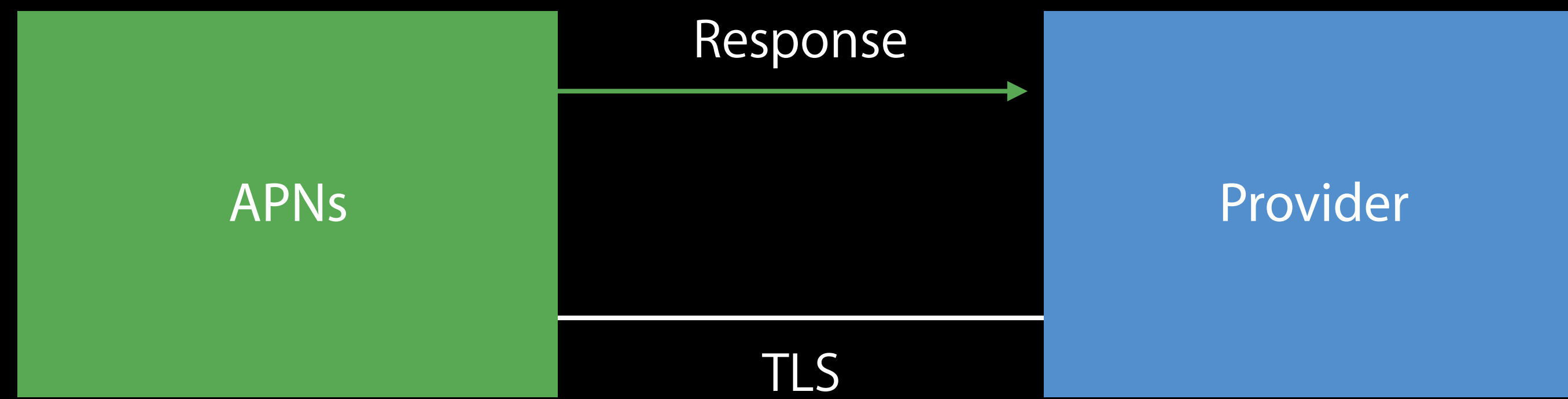
Token Authentication



Token Authentication



Token Authentication



Token Authentication

Details

Provision signing key via Developer Account

- App Store and Ad Hoc**
Sign your iOS app for submission to the App Store or for Ad Hoc distribution.
- Apple Push Notification Service Key (Sandbox & Production)**
Generate an authentication key that can be used to sign your push notification requests.
- Apple Push Notification service SSL (Sandbox & Production)**
Establish connectivity between your notification server, the Apple Push Notification service sandbox, and production environments to deliver remote notifications to your app. When utilizing HTTP/2, the same certificate can be used to deliver app notifications, update ClockKit complication data, and alert background VoIP apps of incoming activity. A separate certificate is required for each app you distribute.

Token Authentication

Details

Provision signing key via Developer Account

- App Store and Ad Hoc**
Sign your iOS app for submission to the App Store or for Ad Hoc distribution.
- Apple Push Notification Service Key (Sandbox & Production)**
Generate an authentication key that can be used to sign your push notification requests.
- Apple Push Notification service SSL (Sandbox & Production)**
Establish connectivity between your notification server, the Apple Push Notification service sandbox, and production environments to deliver remote notifications to your app. When utilizing HTTP/2, the same certificate can be used to deliver app notifications, update ClockKit complication data, and alert background VoIP apps of incoming activity. A separate certificate is required for each app you distribute.

Token Authentication

Details

Provision signing key via Developer Account

Construct the token

Sign token using ES256 (ECDSA using P256 curve, SHA256 hash)

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIzM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcfgSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIixMjM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcgfSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIixMjM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcgfSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature


```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIixMjM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcgfSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIixMjM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcgfSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIzM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcfgSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// JSON Web Tokens
```

```
eyJhbGciOiJIUzI1NiIsImtpZCI6IkpFCQ0RFRkdISUoifQ.eyJpc3MiOiIzM0NTY3ODkwIiwiaWF0IjoiMTQ2Mzk3NTIzMyJ9.aBup1REyXE9Po8ekWJ3ifUly67NlPyTlcfgSwy...
```

Header

```
{  
  "alg": "ES256",  
  "kid": "ABCDEFGHIJ"  
}
```

Claims

```
{  
  "iss": "QRSTUVWXYZ",  
  "iat": "1463975233"  
}
```

Signature

```
// Token Authentication
```

```
// Request example
```

```
HEADERS
```

```
- END_STREAM
```

```
+ END_HEADERS
```

```
:authority = api.push.apple.com
```

```
:method = POST
```

```
:path = /3/device/ad2bcd38f6773cdad050411...
```

```
authorization = bearer eyJhbGciOiJIUzI1Ni...
```

```
apns-topic = com.foo.tokenauth
```

```
DATA
```

```
+ END_STREAM
```

```
{ "aps" : { "alert" : "Hello Token Authentication" } }
```

```
// Token Authentication
```

```
// Request example
```

```
HEADERS
```

```
- END_STREAM
```

```
+ END_HEADERS
```

```
:authority = api.push.apple.com
```

```
:method = POST
```

```
:path = /3/device/ad2bcd38f6773cdad050411...
```

```
authorization = bearer eyJhbGciOiJIUzI1Ni...
```

```
apns-topic = com.foo.tokenauth
```

```
DATA
```

```
+ END_STREAM
```

```
{ "aps" : { "alert" : "Hello Token Authentication" } }
```

```
// Token Authentication
```

```
// Response example
```

```
HEADERS
```

```
+ END_STREAM
```

```
+ END_HEADERS
```

```
:status = 200
```

```
// Token Authentication
```

```
// Response example
```

```
HEADERS
```

```
- END_STREAM
```

```
+ END_HEADERS
```

```
:status = 403
```

```
content-type = application/json
```

```
DATA
```

```
+ END_STREAM
```

```
{ "reason": "InvalidProviderToken" }
```



```
// Token Authentication
```

```
// Response example
```

```
HEADERS
```

```
- END_STREAM
```

```
+ END_HEADERS
```

```
:status = 403
```

```
content-type = application/json
```

```
DATA
```

```
+ END_STREAM
```

```
{ "reason": "ExpiredProviderToken" }
```

Token Authentication

Details

Signed tokens need to be generated periodically

Signing key does not expire

Signing key can be revoked through your Account

Coming later this year...

More Information

<https://developer.apple.com/wwdc16/724>

Related Sessions

Introduction to Notifications

Pacific Heights

Wednesday 9:00AM

Advanced Notifications

Pacific Heights

Wednesday 10:00AM

Labs

Notifications Lab

Frameworks Lab C

Wednesday 11:00AM

Notifications Lab

Graphics, Games & Media Lab B

Friday 9:00AM

WWDC 16 