aws INNOVATE 2018
ONLINE CONFERENCE

Build High Quality Mobile Apps in Minutes with AWS (Level 200)

Tapan Hoskeri, Solution Architect

4 Million+

Mobile apps in the App Store and Google Play

Source: App Annie 2016
Recode 2016

4 Million+

Mobile apps in the App Store and Google Play

18 Weeks

Average time to build mobile apps

Source: App Annie 2016
Recode 2016

4 Million+

Mobile apps in the App Store and Google Play

18 Weeks

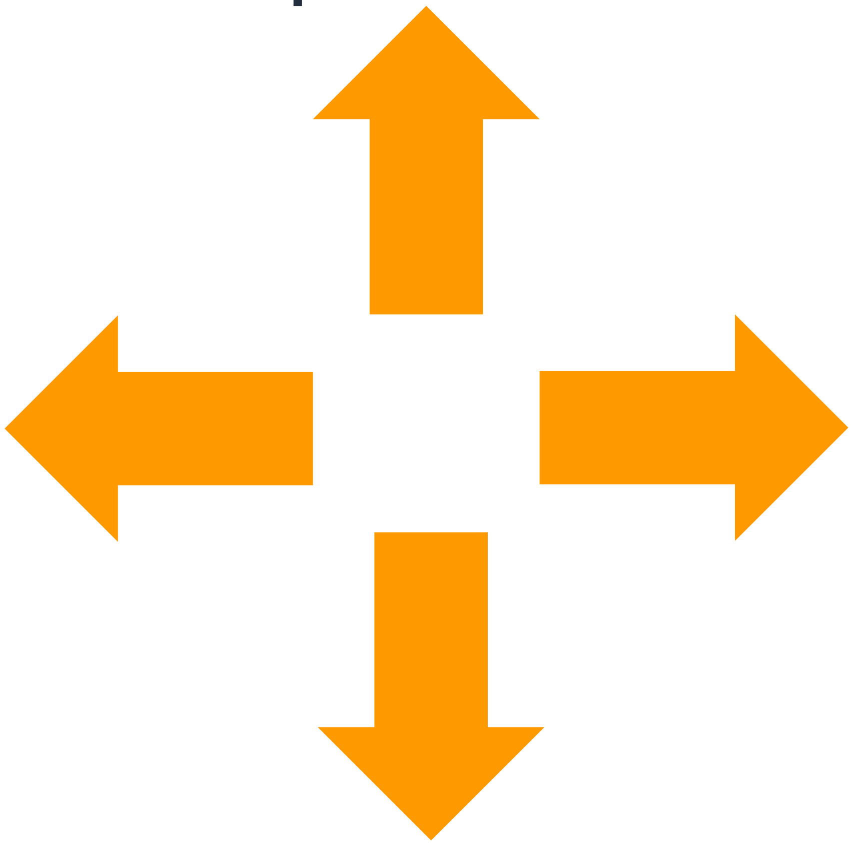
Average time to build mobile apps

25%

Apps abandoned after first use

Source: App Annie 2016
Recode 2016

What’s a Mobile Developer To Do?



Unique features

App quality

Time to market

Scale, performance, & reliability

Great Mobile Apps Run On AWS

SUPERCELL
yelp
NAUGHTY DOG
ABC
NTT docomo

Yik Yak
ROVIO
SEGA®
Earth Networks
HALFBRICK

tinder™
Jobvite
mobstac
twitch
TinyCo™

real eyes
UBISOFT®
Periscope
VidRoll™
Wooga

SHAZAM®
OMNIFONE®
JustGiving™
Delaware North
hike messenger

doapp we do cool stuff
EASY TAXI
gumi
Wawa®

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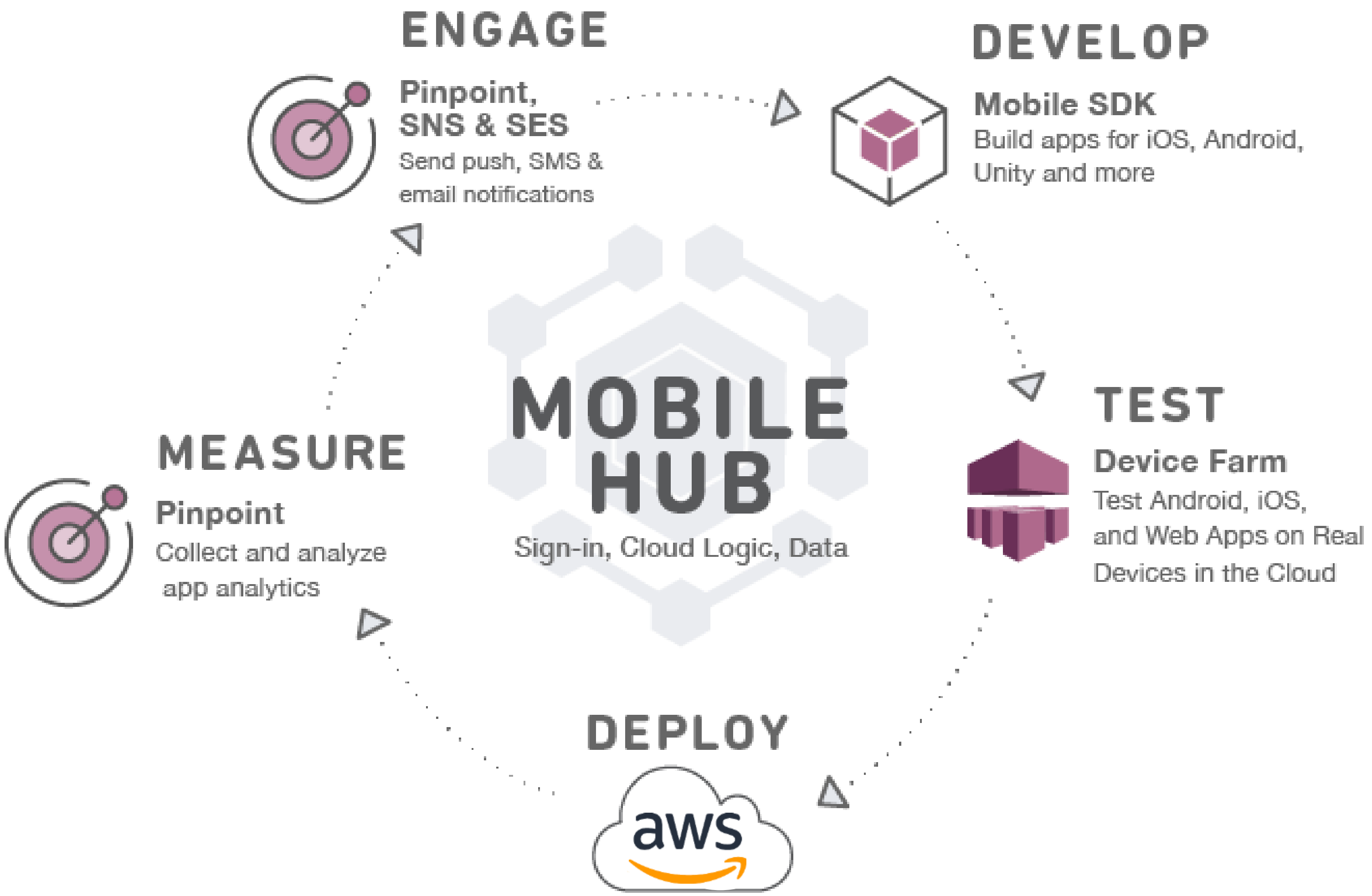
AWS Mobile Hub



ENGAGE

Pinpoint, SNS & SES

Send push, SMS & email notifications

DEVELOP

Mobile SDK

Build apps for iOS, Android, Unity and more

TEST

Device Farm

Test Android, iOS, and Web Apps on Real Devices in the Cloud

DEPLOY

MEASURE

Pinpoint

Collect and analyze app analytics

MOBILE HUB

Sign-in, Cloud Logic, Data

What Do You Get Out Of The Box?

Scalability

What Do You Get Out Of The Box?

Scalability

Flexibility

Use your favorite
{ language,
IDE,
toolchain }

Pay as you go

What Do You Get Out Of The Box?

Scalability

Flexibility

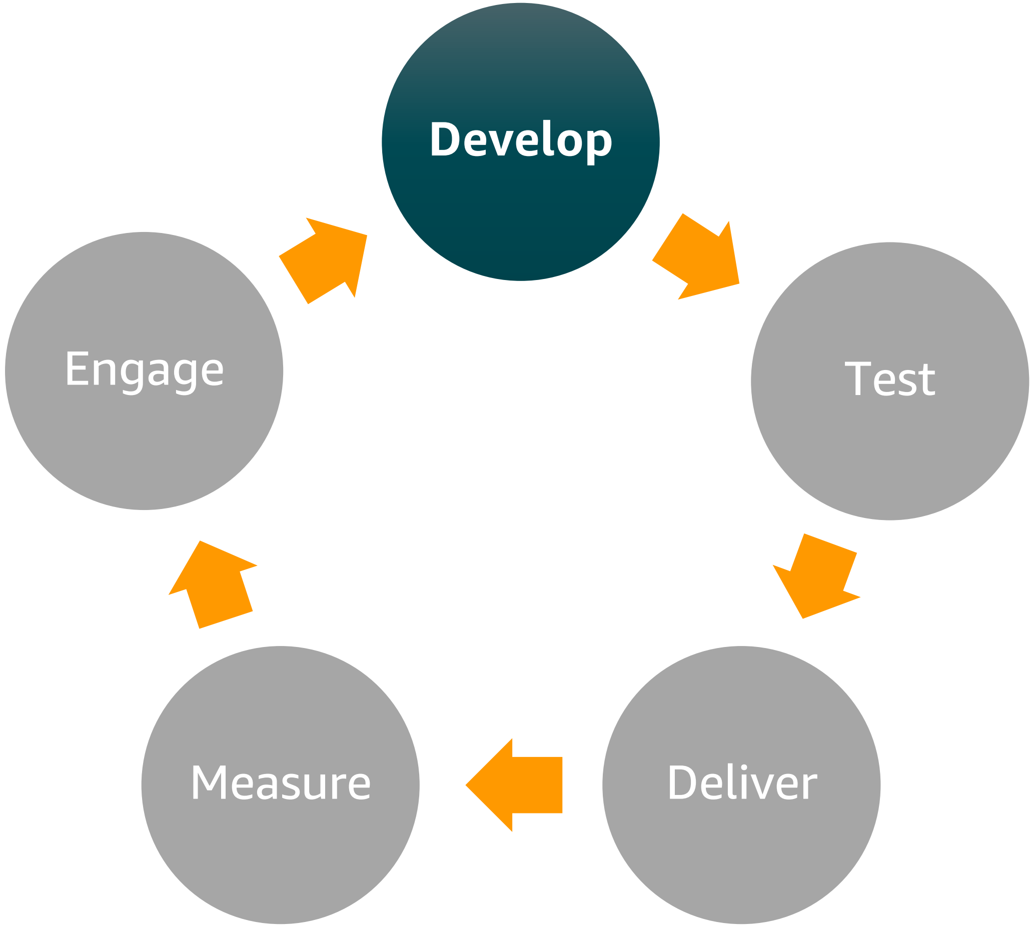
Use your favorite
{ language,
IDE,
toolchain }

Pay as you go

Security & Compliance

HIPAA
CJIS
FedRAMP
PCI Security Standards Council
PARTICIPATING ORGANIZATION
CYBER ESSENTIALS PLUS
FIPS 140-2 CRYPTOGRAPHY
ITAR
cloud security alliance
FDA
GOV.UK
AICPA SOC
irap
NIST
TÜV AUSTRIA

Phases Of A Mobile Application



Develop

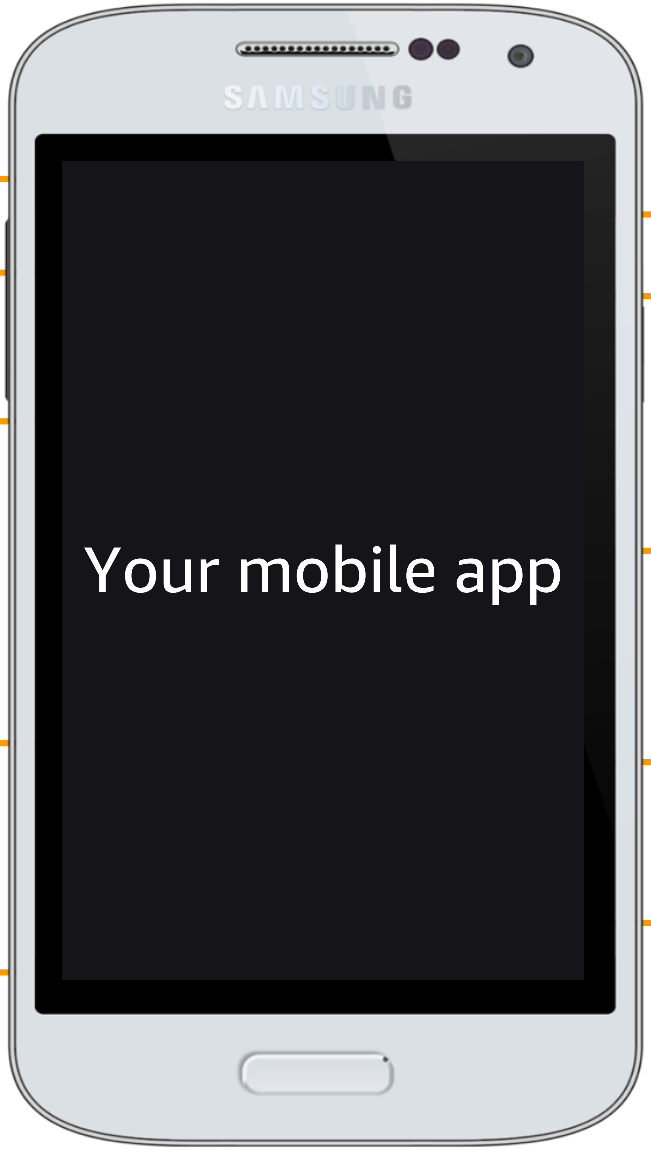
Test

Deliver

Measure

Engage

AWS Mobile Hub For Mobile App Development



User authN and authZ

Amazon Cognito
IAM
(access control)

Run server-side logic

AWS Lambda
Amazon API Gateway

Synchronize data

Amazon Cognito
(Sync)

Analyze user behavior

Amazon Pinpoint

Track retention

Amazon Pinpoint

Store and share media

Amazon S3

Deliver media

Amazon CloudFront

Send push notifications

Amazon SNS Mobile Push
Amazon Pinpoint

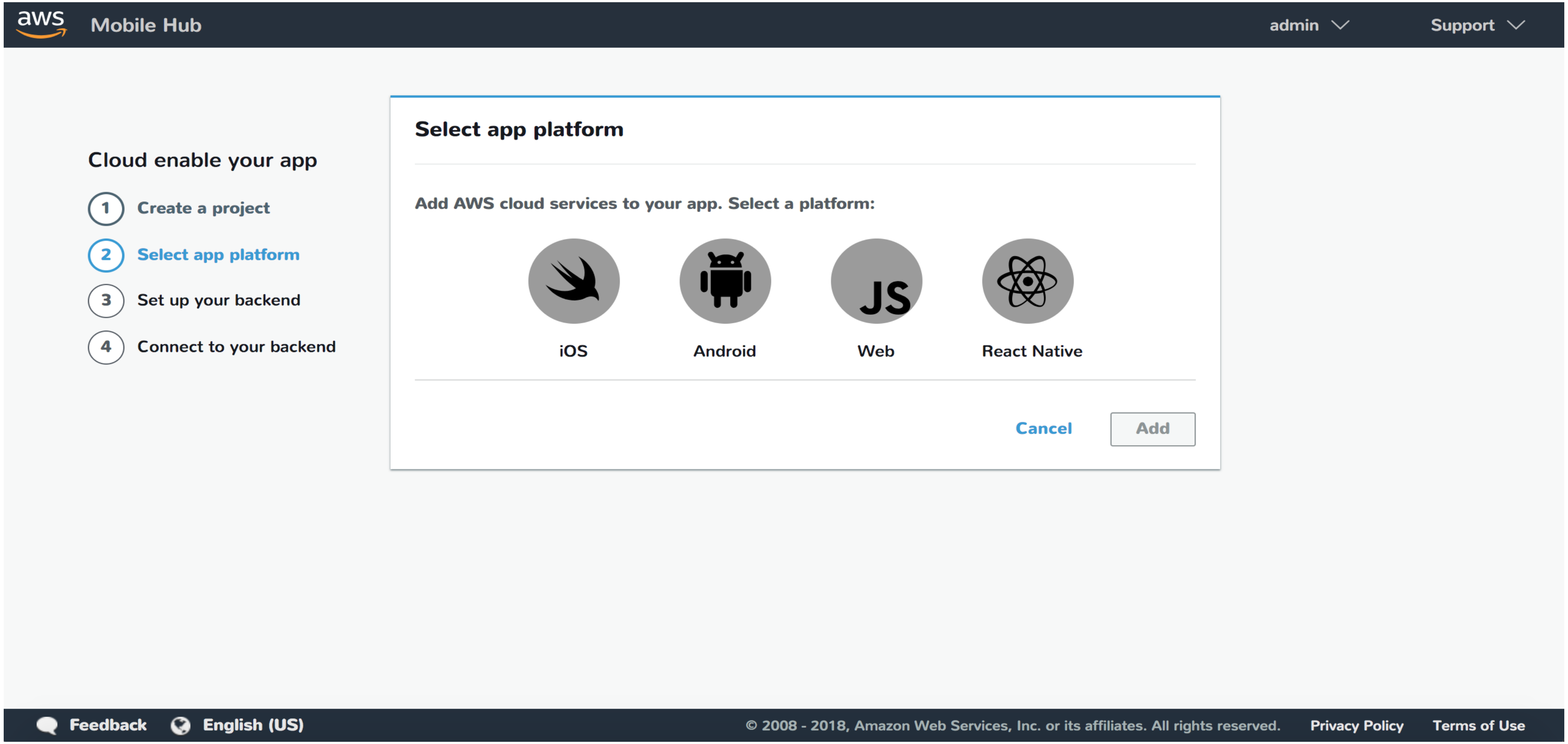
Store data

Amazon DynamoDB
Amazon RDS

Accept conversational input

Amazon Lex

AWS Mobile Hub Console



aws
Mobile Hub
admin
Support

Cloud enable your app

1. Create a project
2. Select app platform
3. Set up your backend
4. Connect to your backend

Select app platform

Add AWS cloud services to your app. Select a platform:

iOS
Android
JS
Web
React Native
Cancel
Add
Feedback
English (US)

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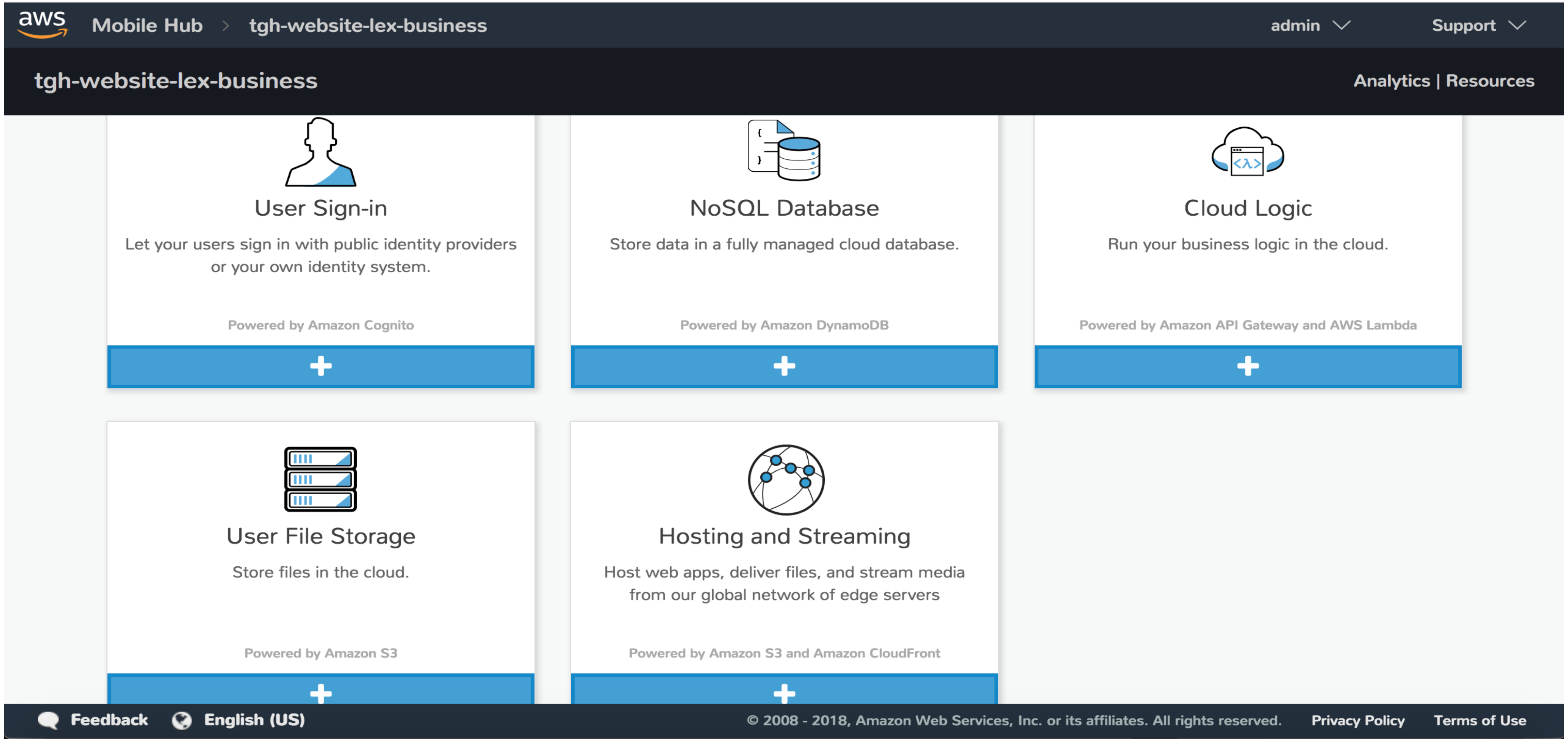
AWS Mobile Hub Console



aws
Mobile Hub > tgh-website-lex-business
admin
Support

tgh-website-lex-business

Analytics | Resources

User Sign-in

Let your users sign in with public identity providers or your own identity system.

Powered by Amazon Cognito

NoSQL Database

Store data in a fully managed cloud database.

Powered by Amazon DynamoDB

Cloud Logic

Run your business logic in the cloud.

Powered by Amazon API Gateway and AWS Lambda

User File Storage

Store files in the cloud.

Powered by Amazon S3

Hosting and Streaming

Host web apps, deliver files, and stream media from our global network of edge servers

Powered by Amazon S3 and Amazon CloudFront

+
Feedback
English (US)

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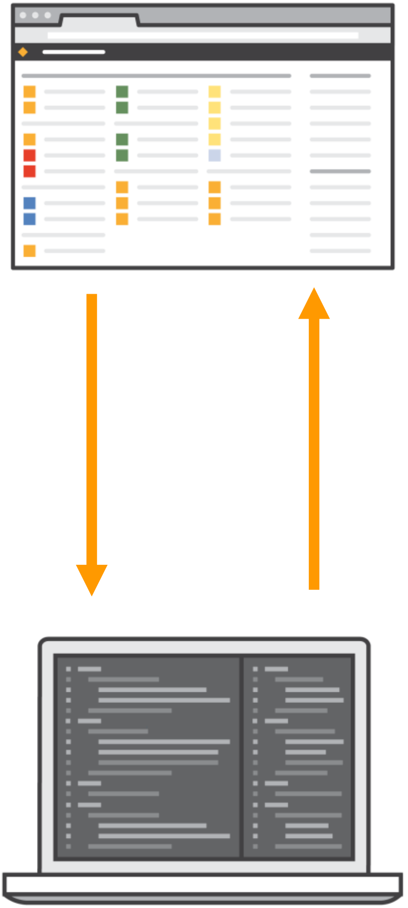
AWS Mobile CLI: Setting up Cloud Services

AWS Mobile Hub Console



awsmobile pull

awsmobile push

awsmobile init
awsmobile user-sign in enable

AWS Amplify Library

Authentication

AuthN, AuthZ, OIDC
JWT, MFA

Analytics

Single line integration with Amazon Pinpoint

API

RESTful APIs with Amazon API Gateway

Storage

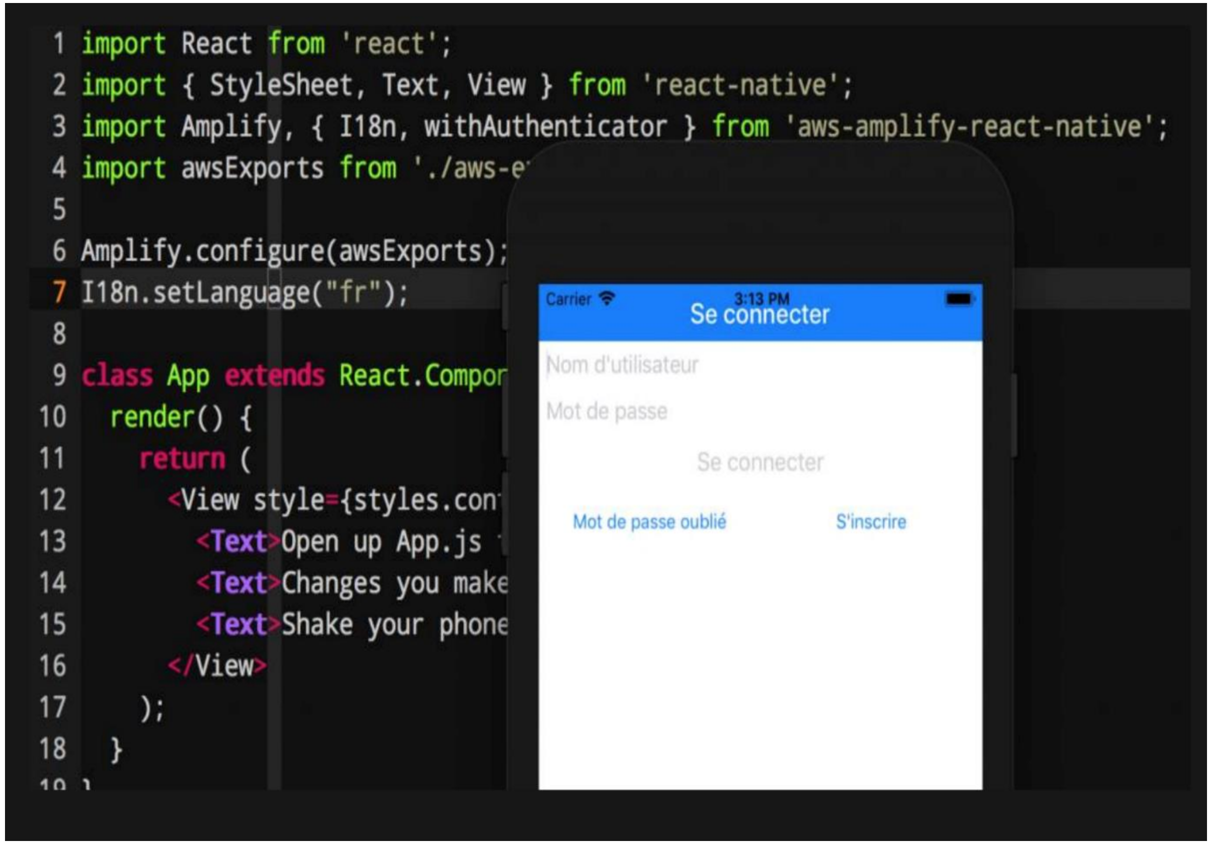
Upload, Download, list content in S3

Caching

LRU cache interface across web apps and React Native

Push notifications with support for Amazon Pinpoint campaigns and targeting

Using Amplify To Connect your App



```
import React from 'react';
import { StyleSheet, Text, View } from 'react-native';
import Amplify, { I18n, withAuthenticator } from 'aws-amplify-react-native';
import awsExports from './aws-e

Amplify.configure(awsExports);
I18n.setLanguage("fr");

class App extends React.Compor
  render() {
    return (
      <View style={styles.con
        <Text>Open up App.js
        <Text>Changes you make
        <Text>Shake your phone
      </View>
    );
  }
```

Carrier
3:13 PM
Se connecter
Nom d'utilisateur
Mot de passe
Se connecter
Mot de passe oublié
S'inscrire

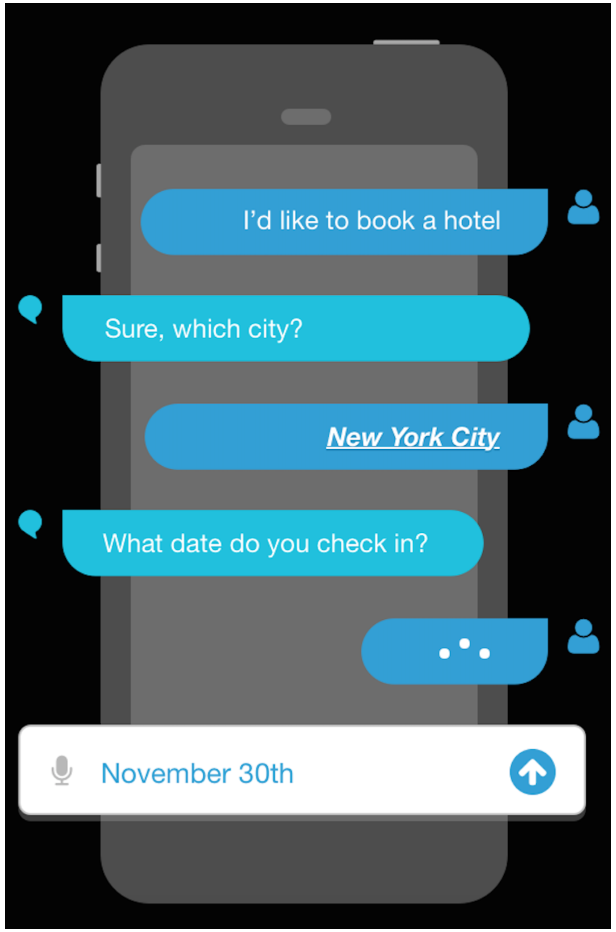
Higher-order components enable a functional sign-in UI with just two lines of code!

Building Bots For Your Apps Using AWS

- Build a bot on Amazon Lex easily
- Save development time and effort using Mobile Hub components and samples
- Invoke existing business applications or SaaS applications using connectors in Mobile Hub

Amazon Lex Bot Structure

BookHotel



I'd like to book a hotel

Sure, which city?

New York City

What date do you check in?

November 30th

Intents

An Intent performs an action in response to natural language user input

Utterances

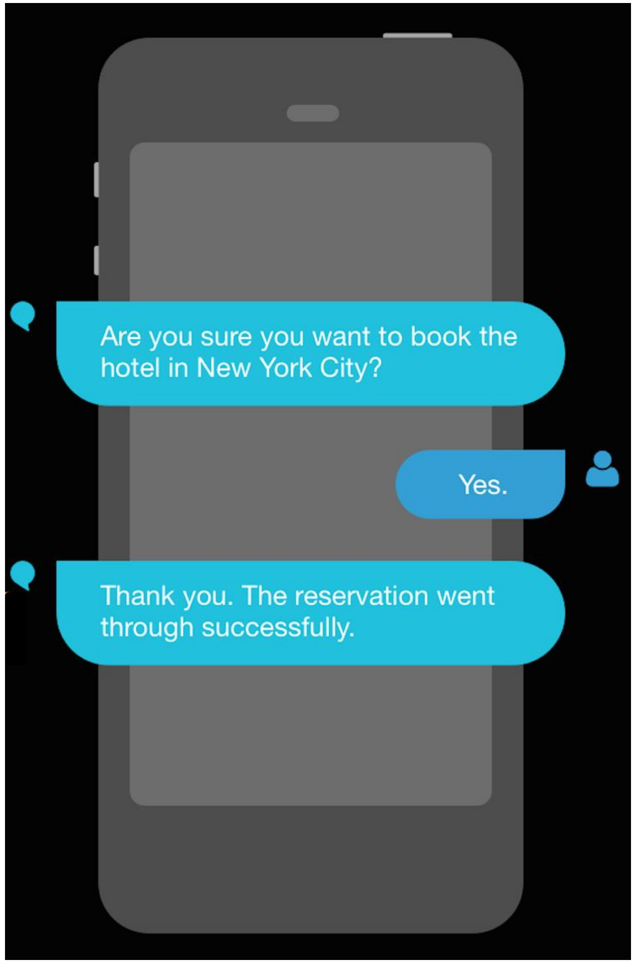
Spoken or typed phrases that invoke your intent

Slots

Slots are input data required to fulfill the intent

Fulfillment

Fulfillment mechanism for your intent

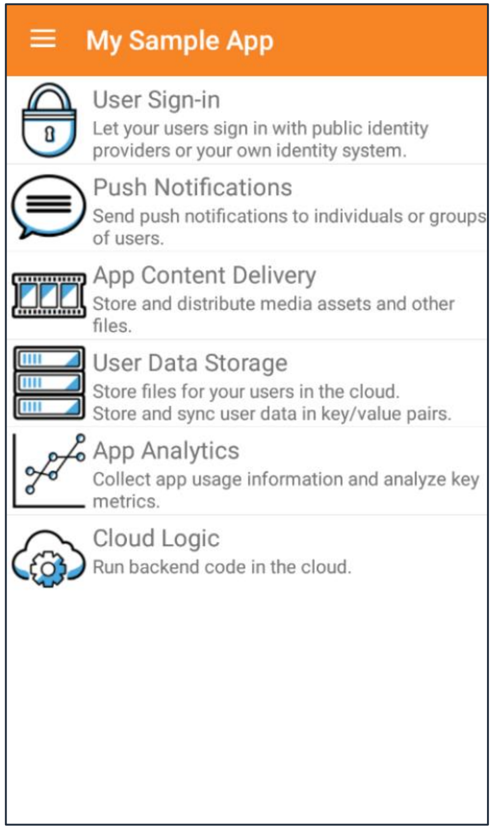


Are you sure you want to book the hotel in New York City?

Yes.

Thank you. The reservation went through successfully.

AWS Mobile Hub



My Sample App

User Sign-in
Let your users sign in with public identity providers or your own identity system.

Push Notifications
Send push notifications to individuals or groups of users.

App Content Delivery
Store and distribute media assets and other files.

User Data Storage
Store files for your users in the cloud.
Store and sync user data in key/value pairs.

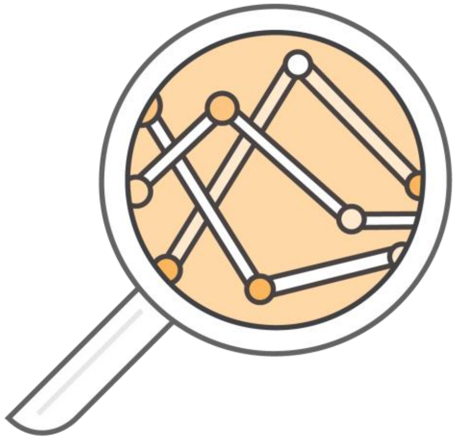
App Analytics
Collect app usage information and analyze key metrics.

Cloud Logic
Run backend code in the cloud.

Working mobile app project includes:

- ✓ XCode or Android Studio project
- ✓ Uses your AWS resources
- ✓ Example application code
- ✓ Helper code
- ✓ Software development kits
- ✓ Detailed integration instructions

Developer Challenges With App Data



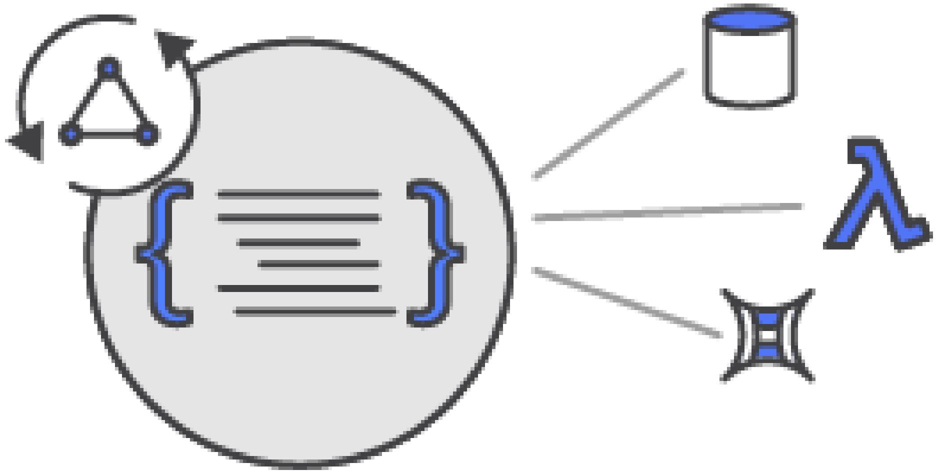
Data requirements vary across devices and become harder when multiple users share data

Users want instant access to data

Users want to continue using their apps even with low or no connectivity

Building scalable data-driven apps without learning distributed systems concepts is hard

Introducing



AWS AppSync

Build Powerful Data Driven Apps With AppSync

Real-time Collaboration

Offline Programming Model with Sync

Get Only the Data You Need

Access Data from Multiple Sources

Fine-grained Access Control

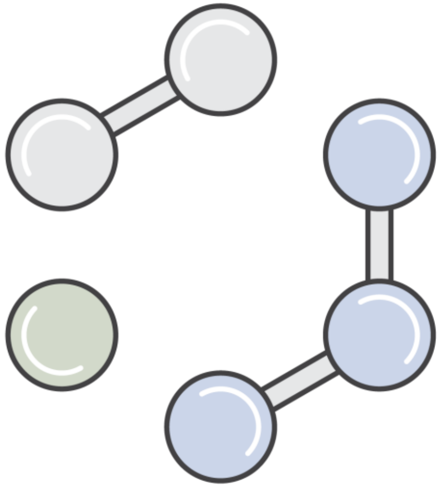
What Can You Build With AppSync?

Real-time and Collaboration Apps

- Dashboard
- Leaderboard
- Field service apps

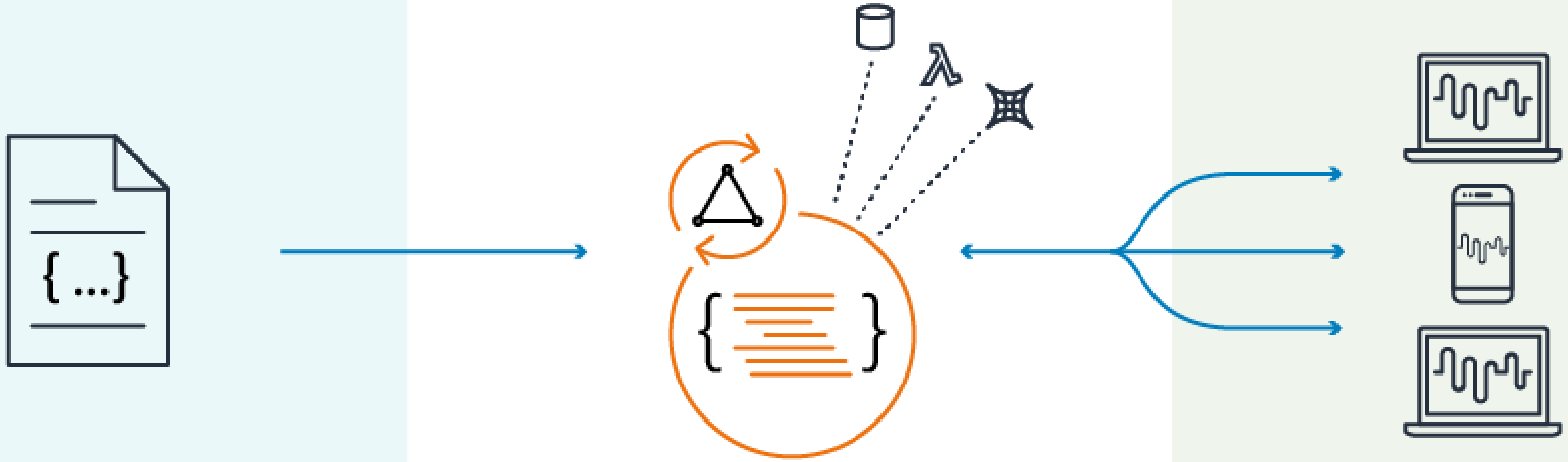
Social Media, Chat and Dating Apps

Geo Apps



Apps with Complex Data Structures and Types

How does AWS AppSync work?



Create and Upload Schema

Developers use the console editor to define and deploy a GraphQL API so the application can query and change data and update in real time

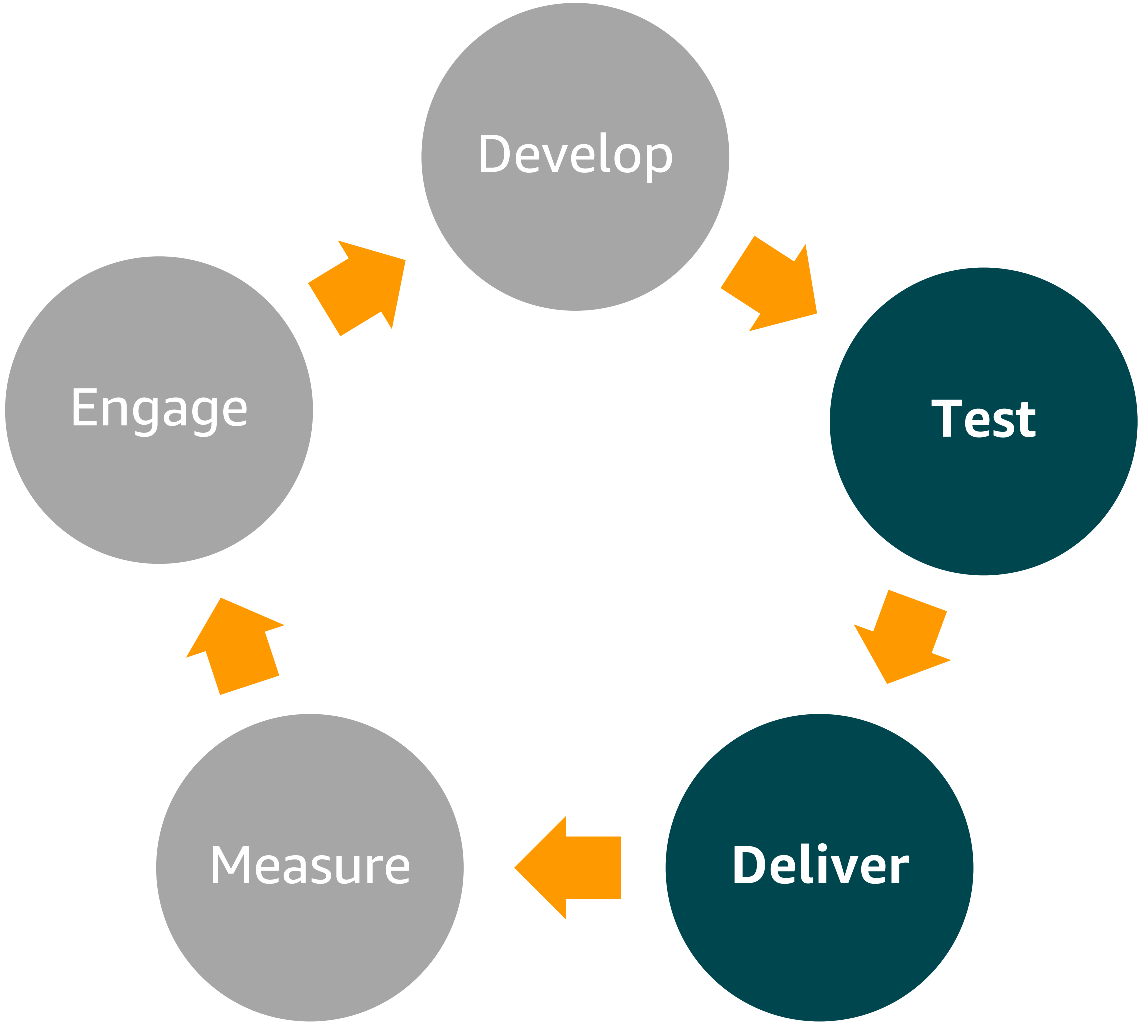
Connect Data Sources

AWS AppSync automatically provisions data sources and compute resources, or uses existing resources, and connects them to your GraphQL API

AppSync updates data in real time and manages data when offline

Client applications make GraphQL API calls to fetch data, make changes, or subscribe to changes in real time from all users and devices. Offline users can continue to access and change app data and get updates when they reconnect

Phases Of A Mobile Application


Develop

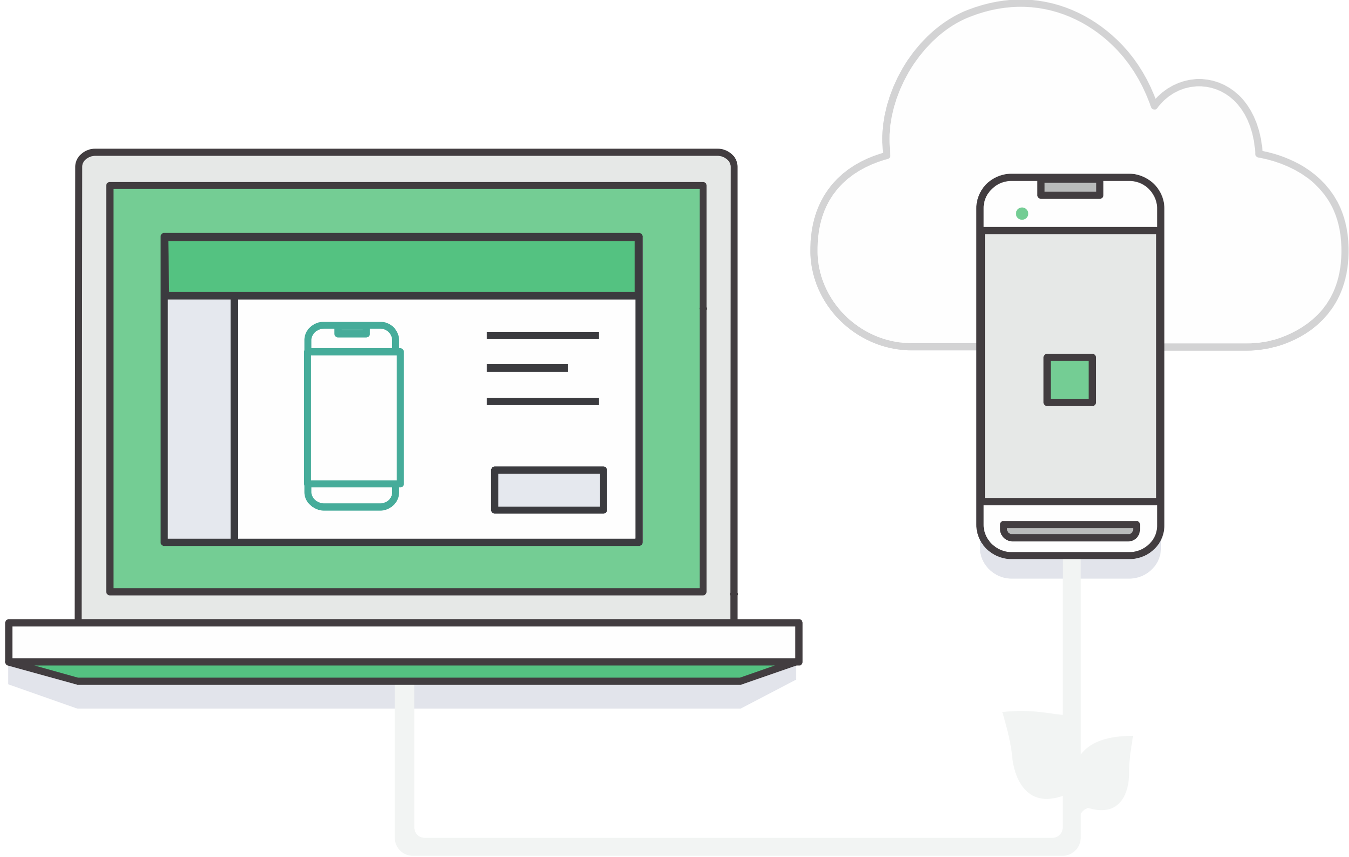
Test

Deliver

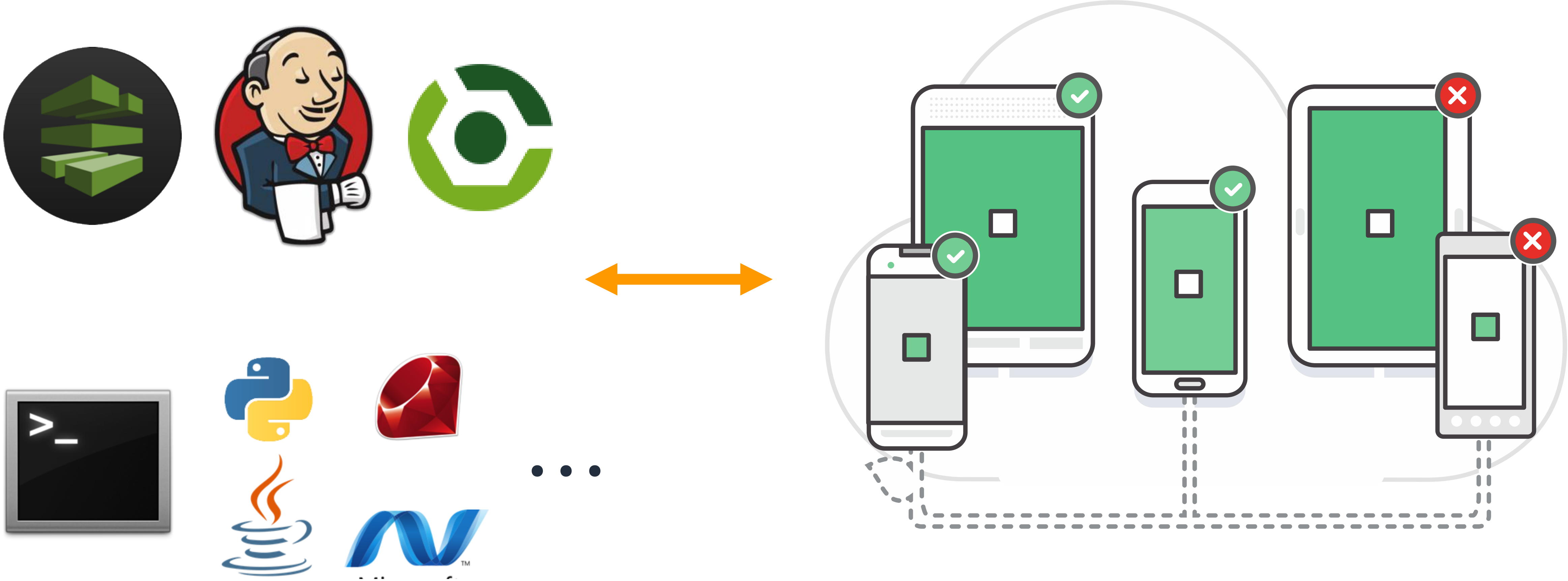
Measure

Engage

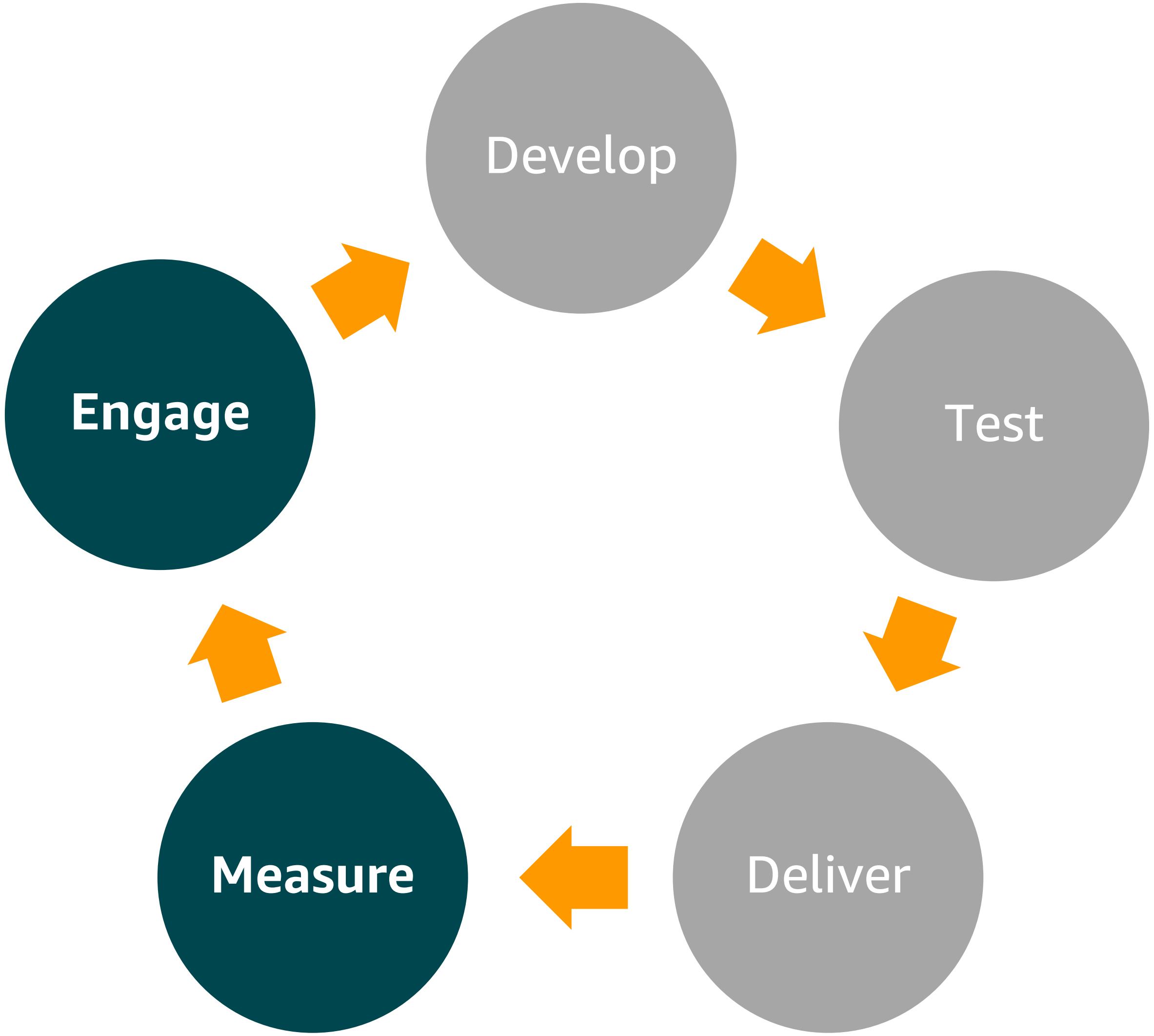
AWS Device Farm – Test On Real Devices



Continuously Deliver Quality Applications



Phases Of A Mobile Application


Develop
Test
Deliver
Measure
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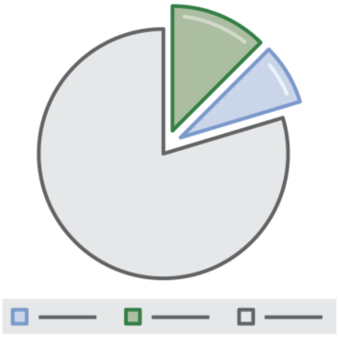
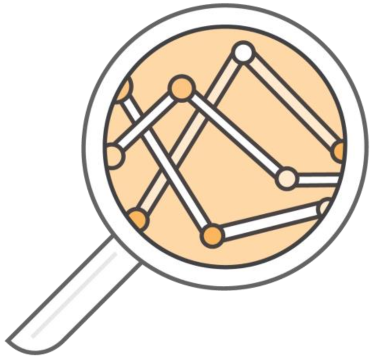
Generate Insights To Drive Informed Decisions

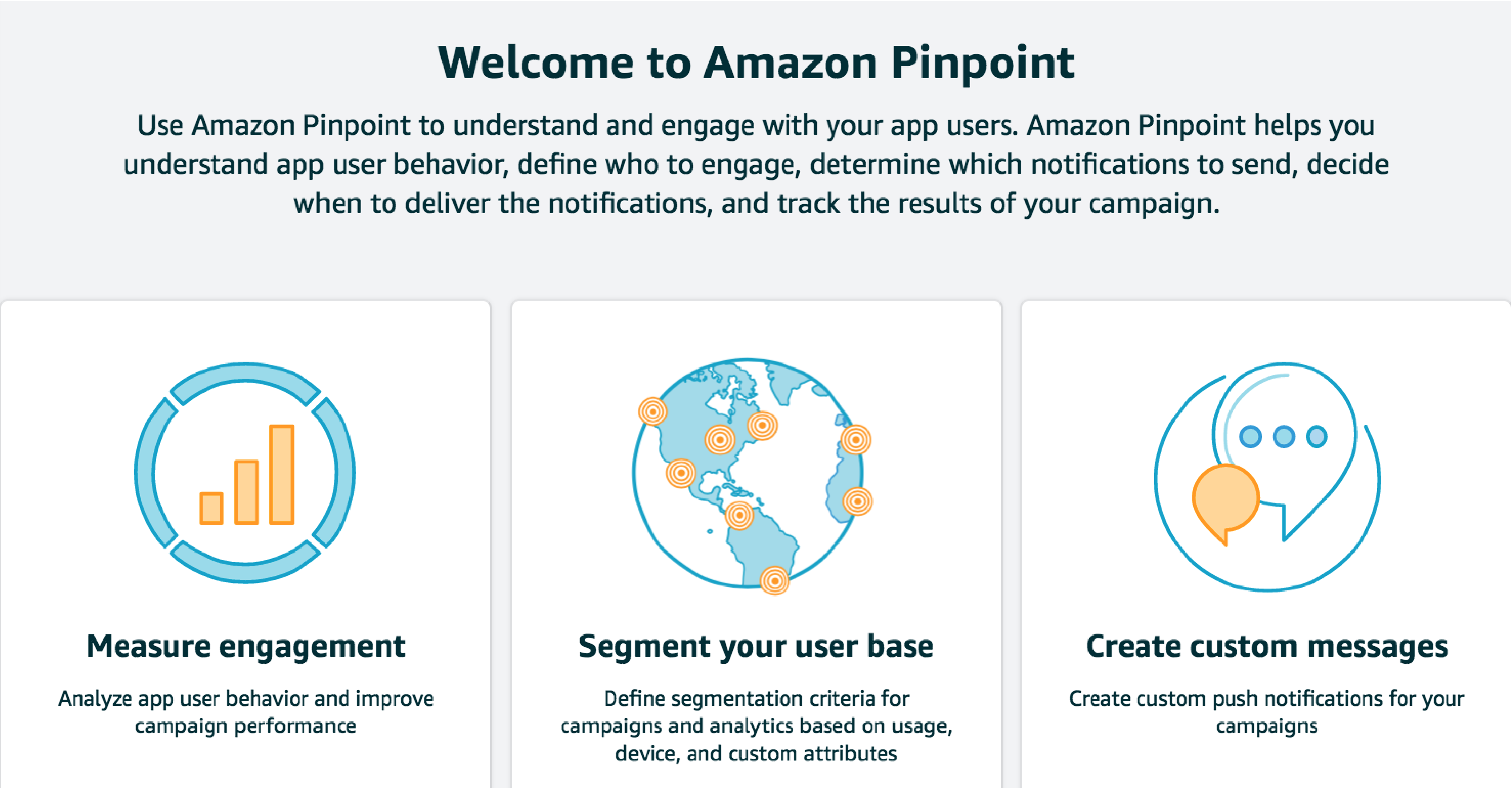


Analytics on usage, retention, and monetization



Flexible app instrumentation and custom analytics

Integrated mobile and web analytics



Welcome to Amazon Pinpoint

Use Amazon Pinpoint to understand and engage with your app users. Amazon Pinpoint helps you understand app user behavior, define who to engage, determine which notifications to send, decide when to deliver the notifications, and track the results of your campaign.

Measure engagement

Analyze app user behavior and improve campaign performance

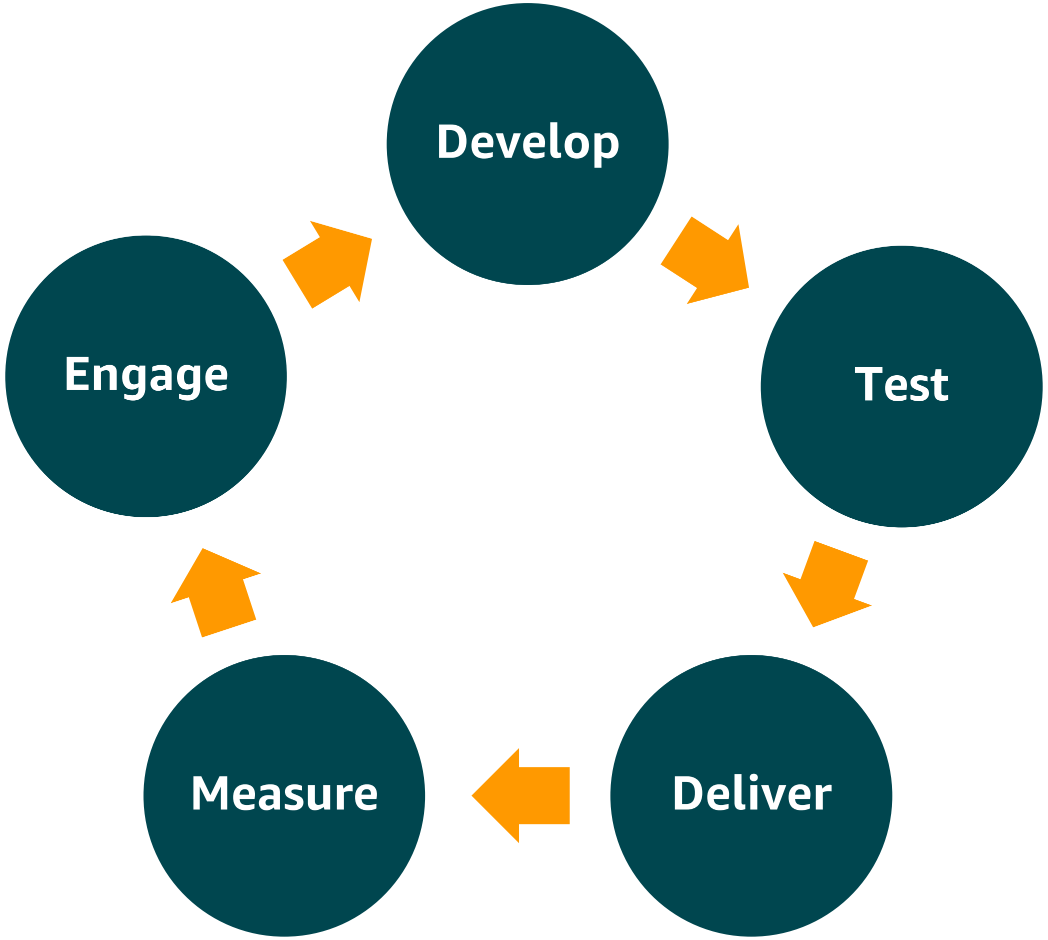
Segment your user base

Define segmentation criteria for campaigns and analytics based on usage, device, and custom attributes

Create custom messages

Create custom push notifications for your campaigns

Phases Of A Mobile Application


Develop
Test
Deliver
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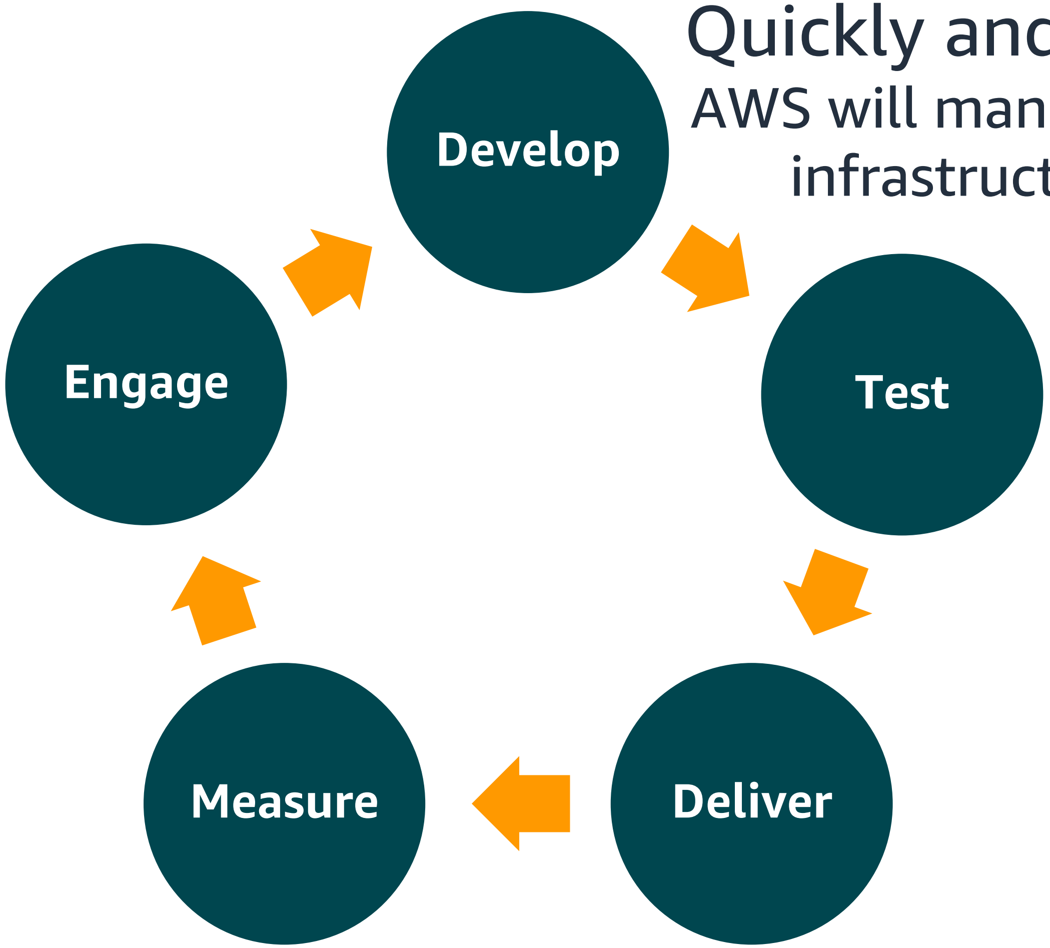
Engage

Phases Of A Mobile Application


Develop
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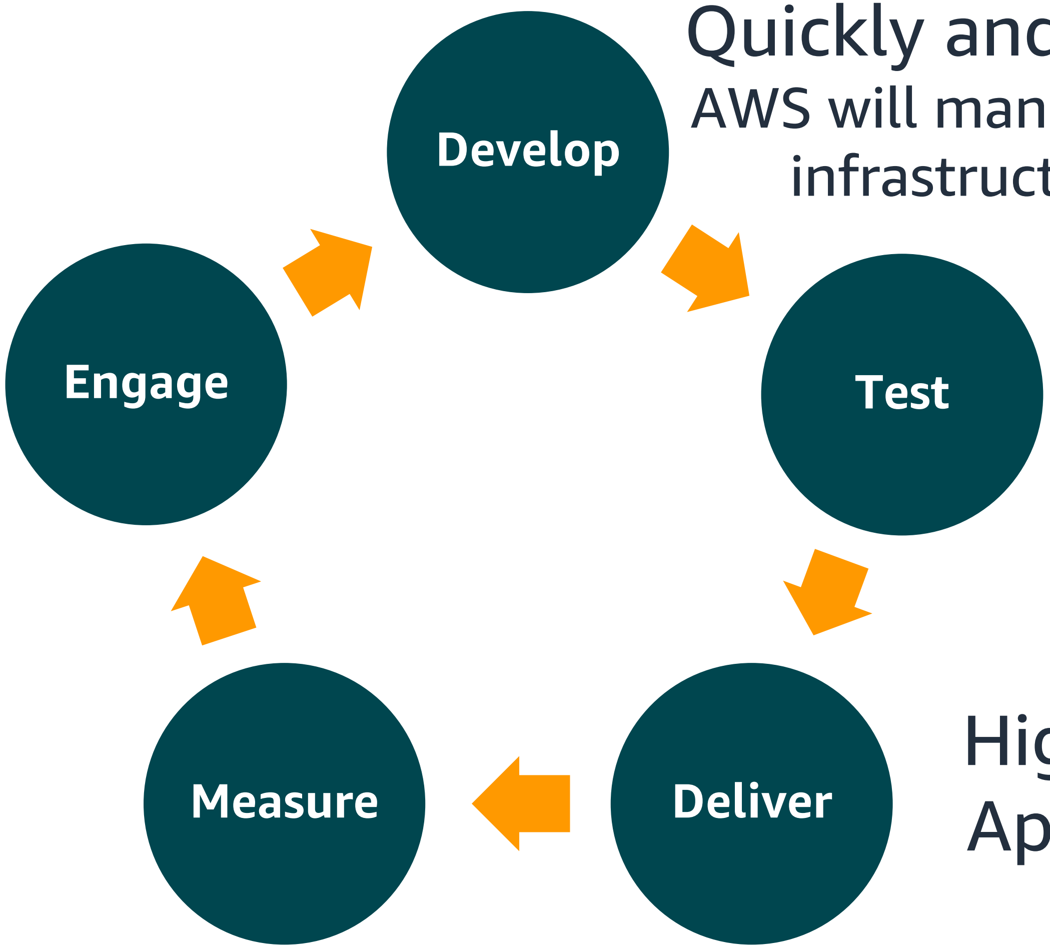
Deliver
Measure
Engage

Quickly and Easily

AWS will manage the infrastructure

Phases Of A Mobile Application



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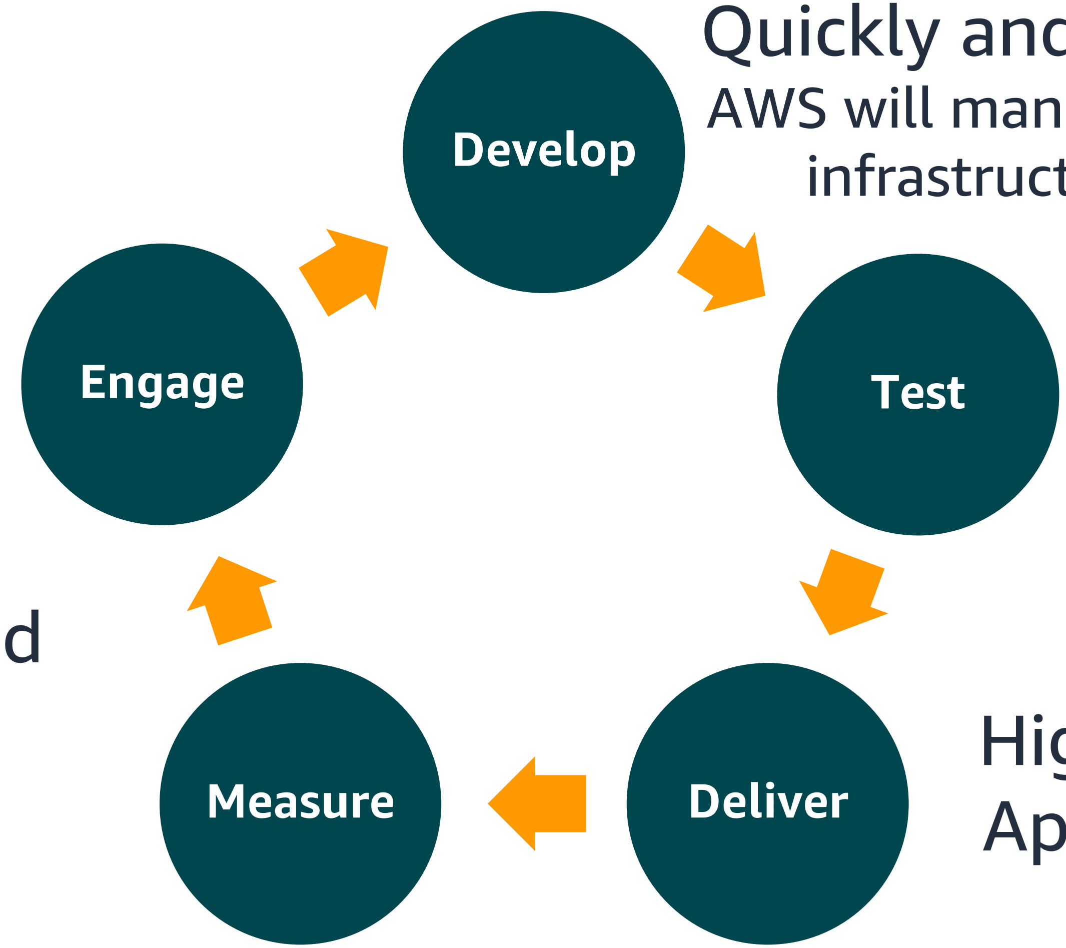
Quickly and Easily

AWS will manage the infrastructure

High Quality Applications

Phases Of A Mobile Application



Develop

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Deliver

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Engage

Quickly and Easily
AWS will manage the infrastructure

High Quality Applications

Intelligently, proactively, and completely

Learn from AWS experts. Advance your skills and knowledge. Build your future in the AWS Cloud.

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Free, self-paced online courses built by AWS experts

Classroom Training

Classes taught by accredited AWS instructors

AWS Certification

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aws msp

AWS Managed Service Providers

APN Consulting Partners who are skilled at cloud infrastructure and application migration, and offer proactive management of their customer's environment.

aws competency

AWS Competency Partners

APN Partners who have demonstrated technical proficiency and proven customer success in specialized solution areas.

aws marketplace

AWS Marketplace

A digital catalog with thousands of software listings from independent software vendors that make it easy to find, test, buy, and deploy software that runs on AWS.

aws service delivery

AWS Service Delivery Partners

APN Partners with a track record of delivering specific AWS services to customers.

Ready to get started with an APN Partner?
Find a partner: https://aws.amazon.com/partners/find/
Learn more at the AWS Partner Network Booth

aws | intel

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