AWS re:Invent

MOB307

Frontend web and cross-platform mobile development on AWS

Nader Dabit

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AWS

AWS re:Invent

aws

Agenda

AWS Amplify overview & state of the union

AWS Amplify - New features For 2019

AWS Amplify new feature highlights and deep dive

Amplify Console – new features for 2019

Amplify Console new feature highlights and deep dive

Live Demo - Rapidly prototyping & testing a serverless API with AWS Amplify

Let’s talk

Follow me on Twitter @dabit3

Related breakouts

DOP334 Set up a serverless app using React and AWS Amplify

EUC309 Build your own omnichannel e-commerce experience

EUC401 Create a custom Amazon Connect agent using AWS Amplify

MOB302 Build an AI-powered mobile app with AWS Amplify

MOB311 The complete guide to user authentication with the Amplify Framework

DOP315 Build using JavaScript on Amazon ECS, AWS Lambda, and Amazon EC2

AWS Amplify State of the Union

AWS re:Invent

AWS Amplify State of the Union

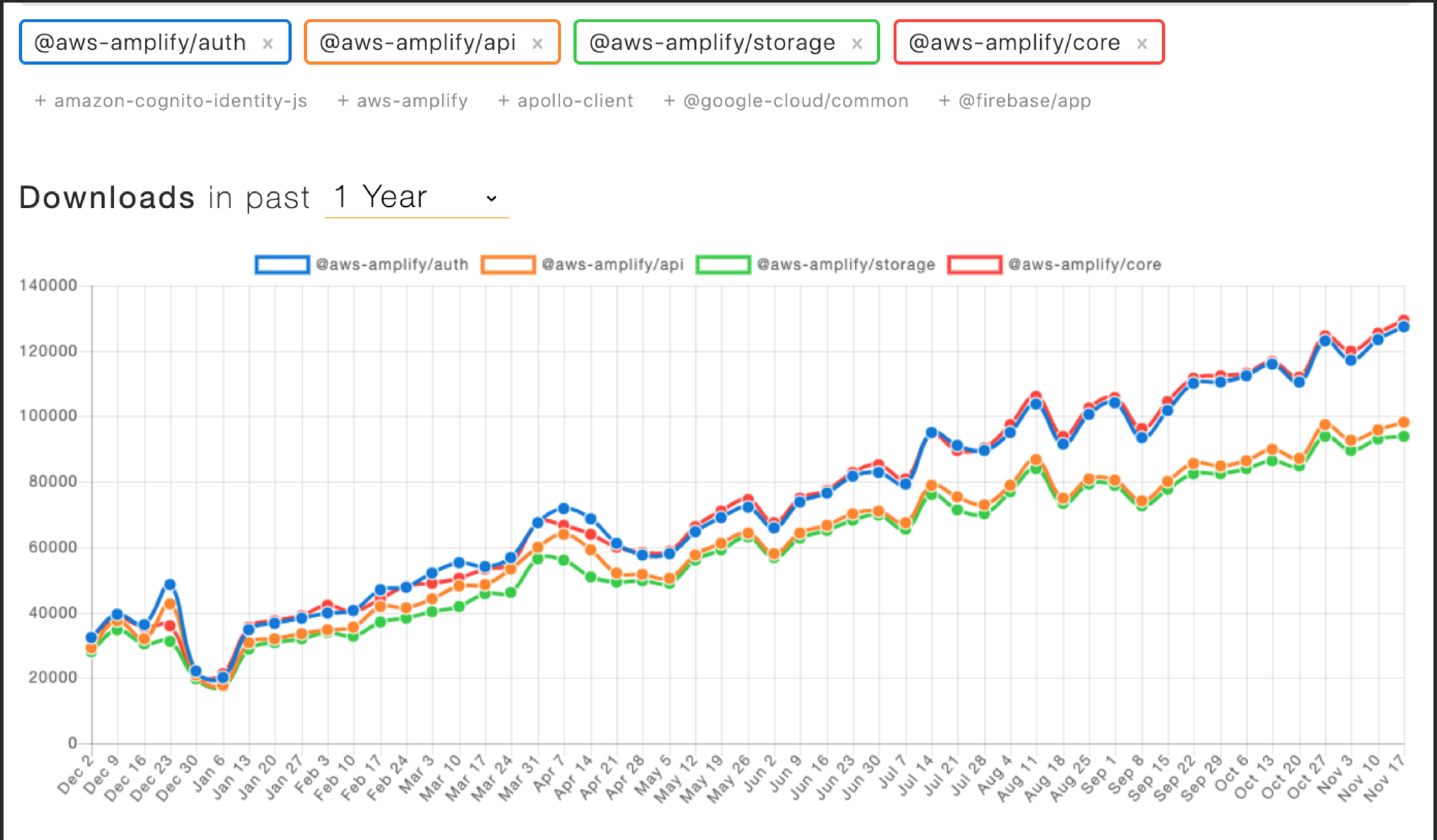
2019 Releases

AWS Amplify – 14 feature launches

Amplify Console – 15 feature launches

AWS Amplify State of the Union

2019 Downloads / usage



Downloads in past 1 Year ⌄

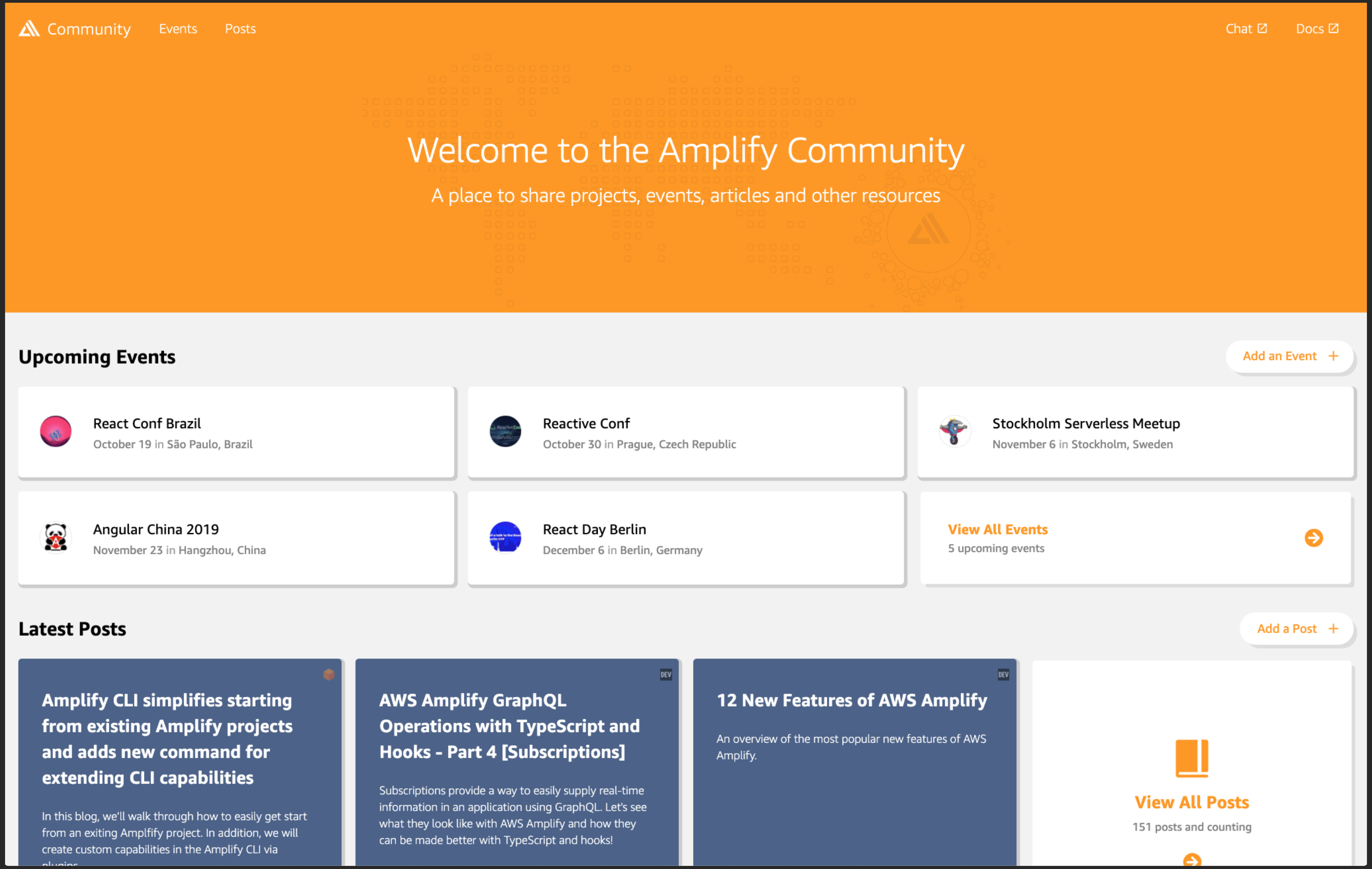
AWS Amplify State of the Union

Most Popular Categories

1. Auth
2. API
3. Storage
4. Analytics

AWS Amplify State of the Union

Community Site



Community Events Posts Chat Docs

Welcome to the Amplify Community

A place to share projects, events, articles and other resources

Upcoming Events

Add an Event +

React Conf Brazil
October 19 in São Paulo, Brazil

Reactive Conf
October 30 in Prague, Czech Republic

Stockholm Serverless Meetup
November 6 in Stockholm, Sweden

Angular China 2019
November 23 in Hangzhou, China

React Day Berlin
December 6 in Berlin, Germany

View All Events
5 upcoming events

Latest Posts

Add a Post +

Amplify CLI simplifies starting from existing Amplify projects and adds new command for extending CLI capabilities

In this blog, we'll walk through how to easily get start from an exiting Amplify project. In addition, we will create custom capabilities in the Amplify CLI via plugins.

AWS Amplify GraphQL Operations with TypeScript and Hooks - Part 4 [Subscriptions]

Subscriptions provide a way to easily supply real-time information in an application using GraphQL. Let's see what they look like with AWS Amplify and how they can be made better with TypeScript and hooks!

12 New Features of AWS Amplify

An overview of the most popular new features of AWS Amplify.

View All Posts
151 posts and counting

AWS Amplify State of the Union

Community contributions

400% increase in community contribution in 2019

AWS Amplify Overview

AWS Amplify Overview

CLI Toolchain

Client libraries (iOS, Android, JavaScript)

Platform-specific components

Hosting + CI / CD platform

AWS Amplify Workflow

1. Create services via the CLI
2. Connect & interact with services via the client libraries
3. Update, remove, and add additional services via the CLI
4. Deploy with Amplify Console

Amplify CLI

Amplify CLI

Creating services

Updating and configuring existing services

Local mocking and testing

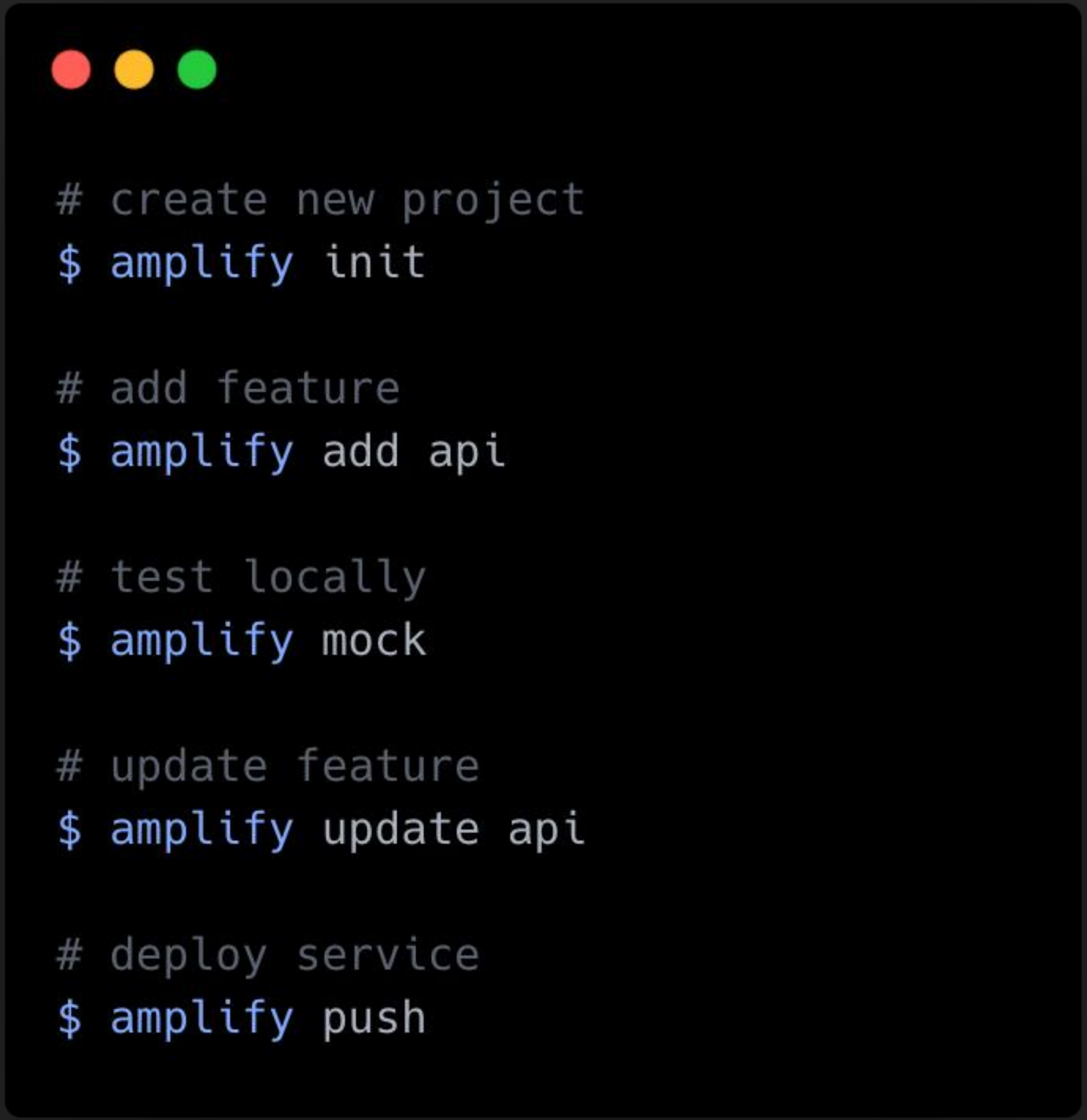
Creating and managing environments

GraphQL and Lambda code generation

Removing services and deleting projects

AWS Amplify CLI

Usage



```
# create new project
$ amplify init

# add feature
$ amplify add api

# test locally
$ amplify mock

# update feature
$ amplify update api

# deploy service
$ amplify push
```

Amplify Client

Amplify Client

Interact with services & APIs from a client application

Amplify Native for iOS and Android

JavaScript Client for web and React Native

JavaScript Framework-specific components

AWS Amplify Client

Platform support

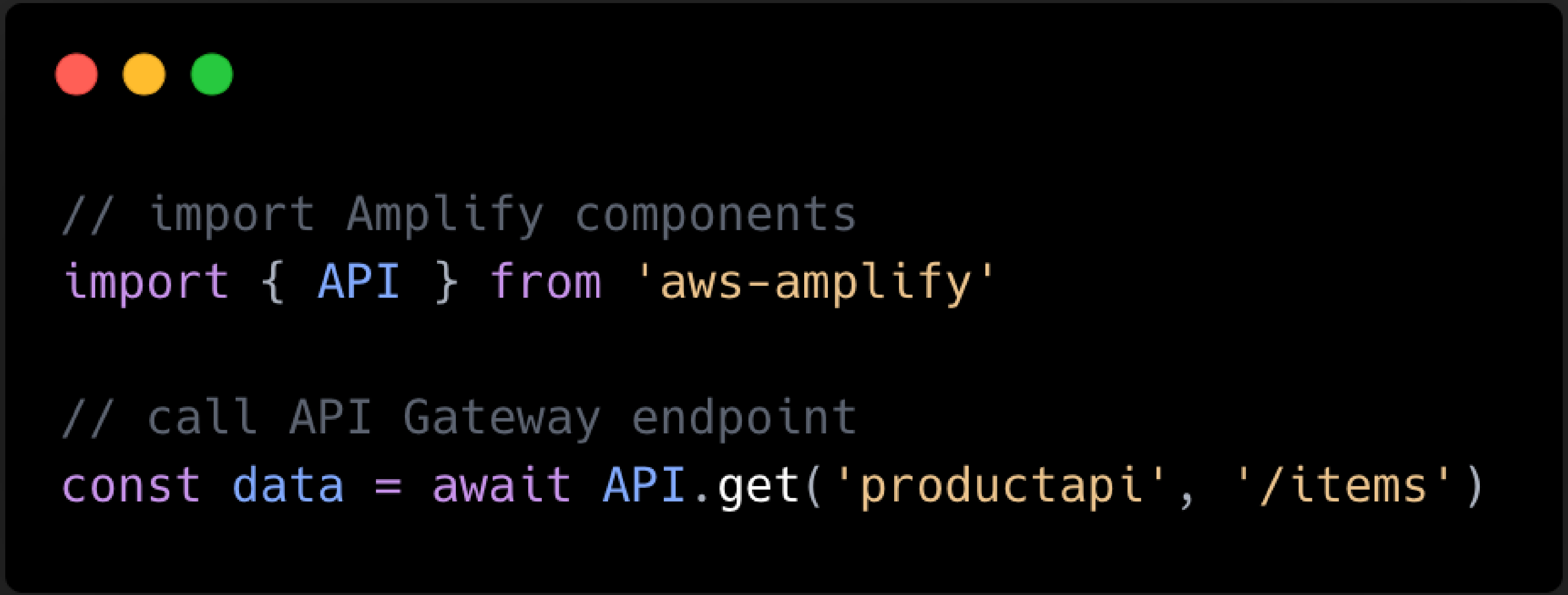
- JavaScript
- React Native
- Native iOS
- Native Android

AWS Amplify Client

Framework-specific support

AWS Amplify Client

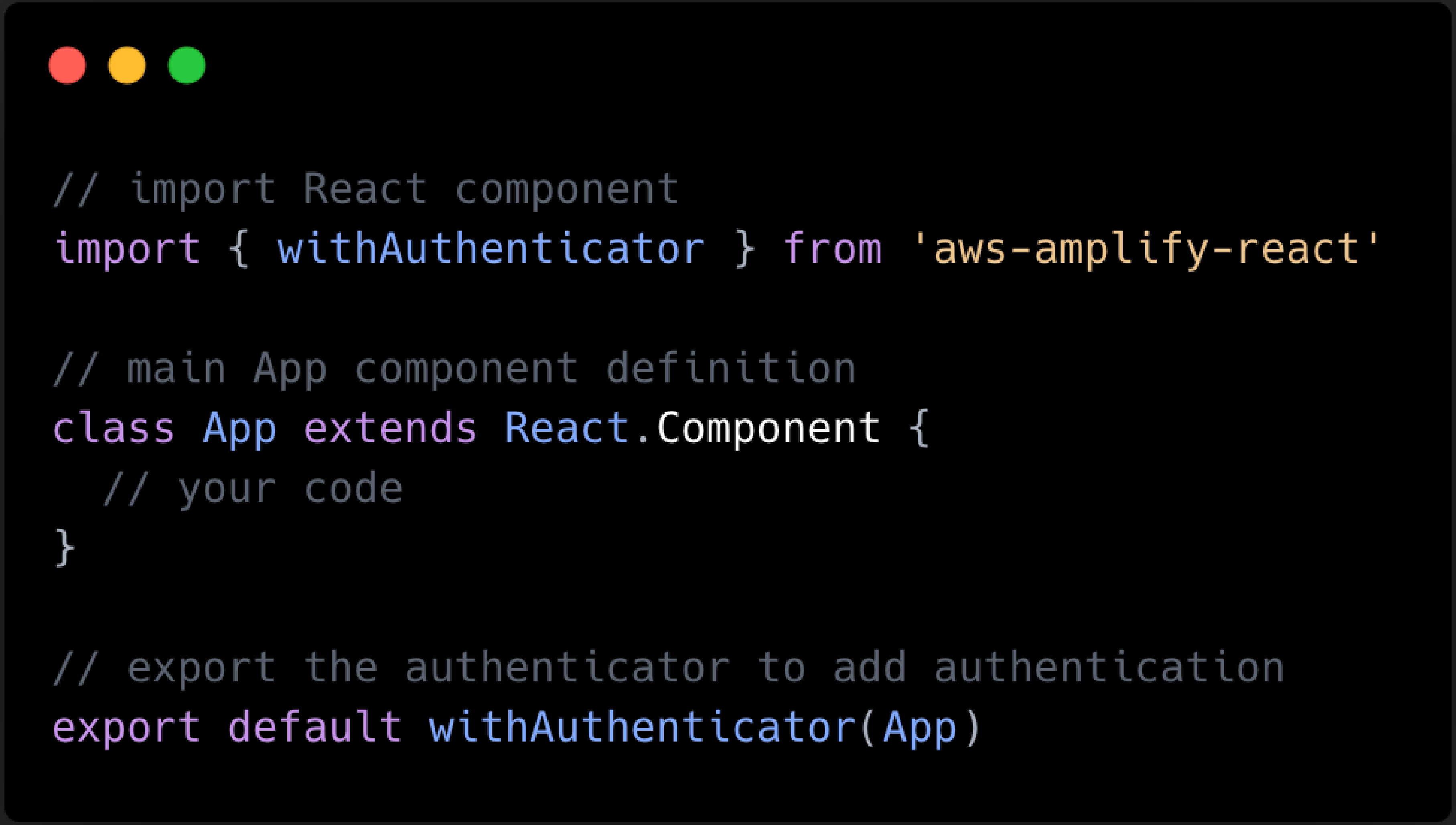
Usage



```
// import Amplify components
import { API } from 'aws-amplify'

// call API Gateway endpoint
const data = await API.get('productapi', '/items')
```

AWS Amplify Framework Components

Usage



```
// import React component
import { withAuthenticator } from 'aws-amplify-react'

// main App component definition
class App extends React.Component {
  // your code
}

// export the authenticator to add authentication
export default withAuthenticator(App)
```

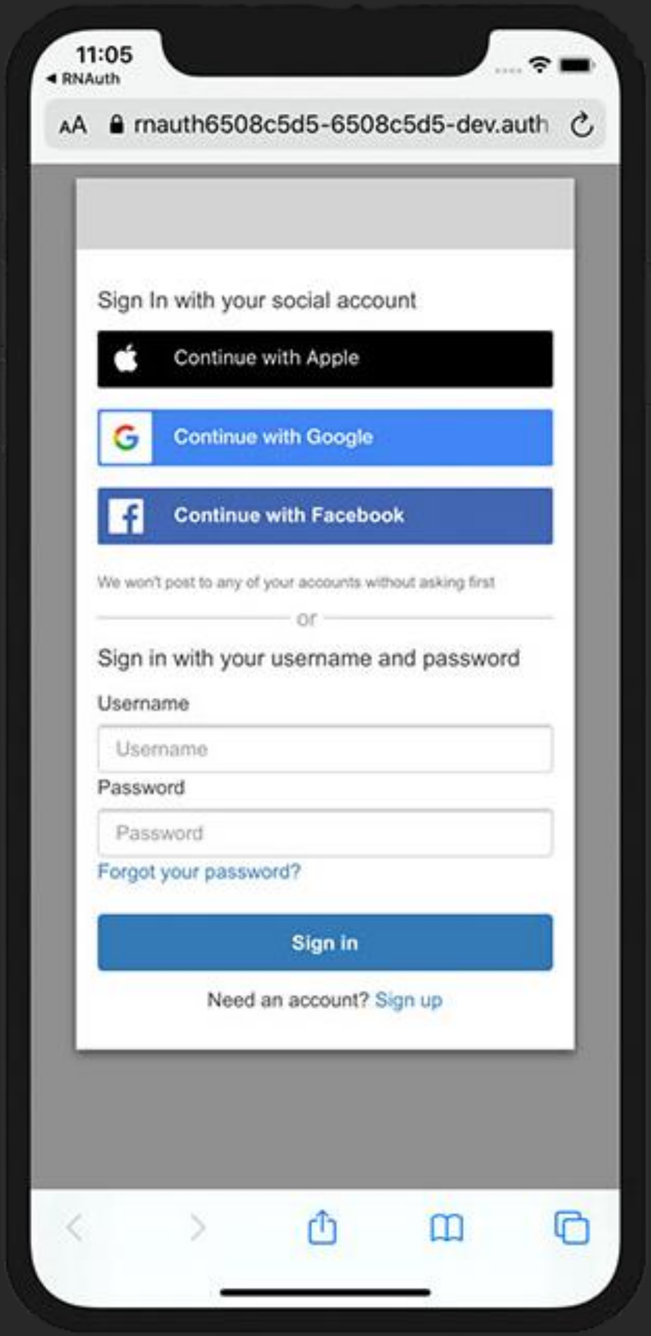
AWS Amplify Client

OAuth Support Updates

- Sign In with Apple NEW
- Facebook
- Google
- Amazon
- OIDC

AWS Amplify Client

OAuth Support Updates



Sign In with your social account

Continue with Apple

Continue with Google

Continue with Facebook

We won't post to any of your accounts without asking first

or

Sign in with your username and password

Username

Username

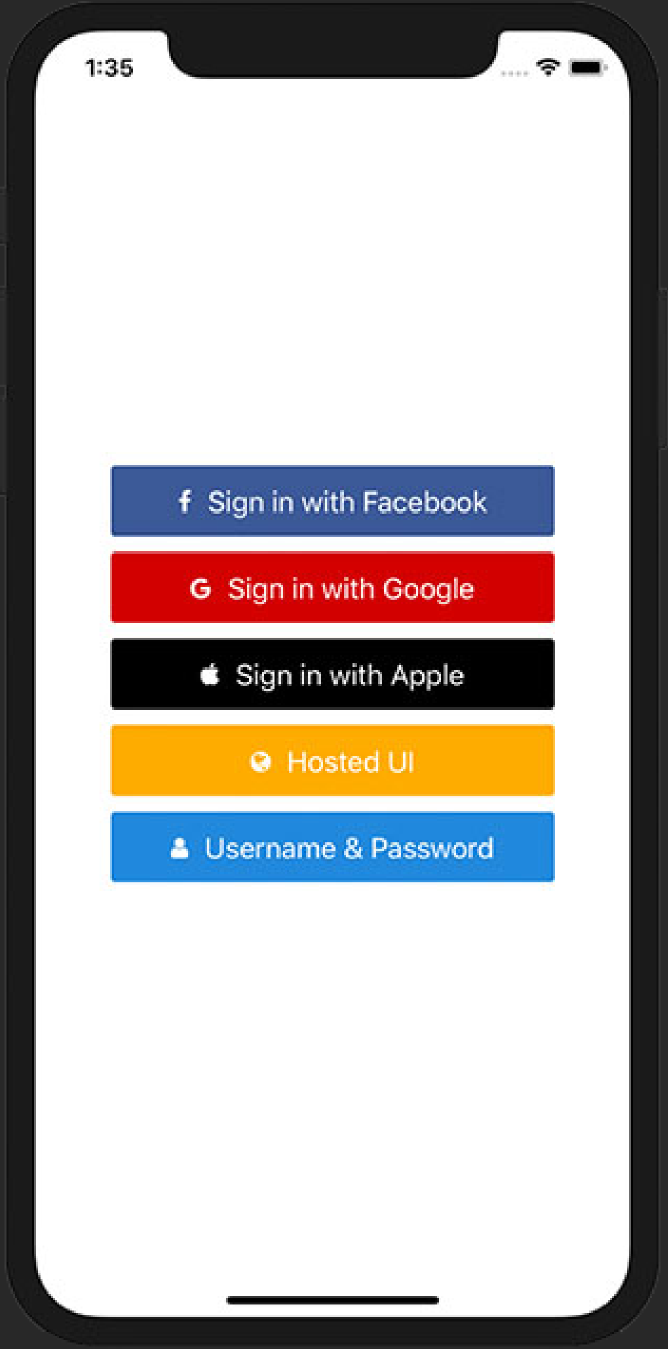
Password

Password

Forgot your password?

Sign in

Need an account? Sign up



Sign in with Facebook

Sign in with Google

Sign in with Apple

Hosted UI

Username & Password

AWS Amplify New Feature Overview

Amplify CLI / Library – New Features in 2019

- ✓ Amplify DataStore
- ✓ Lambda Triggers (S3, Cognito)
- ✓ Local mocking and testing
- ✓ Multiple authorization types for AppSync
- ✓ Custom AppSync resolvers
- ✓ AppSync Lambda resolvers
- ✓ Predictions - Machine learning & AI
- ✓ Multiple Environments
- ✓ Import Amazon Aurora Serverless data source for AppSync
- ✓ Full stack starters
- ✓ OAuth configuration via CLI
- ✓ Custom DynamoDB indexes

AWS Amplify CLI & Client

New features coming tomorrow

- ✓ We are bringing Amplify JS library goodness to iOS/Android
- ✓ Major improvements to offline across all the clients

AWS Amplify CLI & Client

New feature overview & best practices

New feature overview

AWS AppSync
Multiple Authorization Types

New feature overview

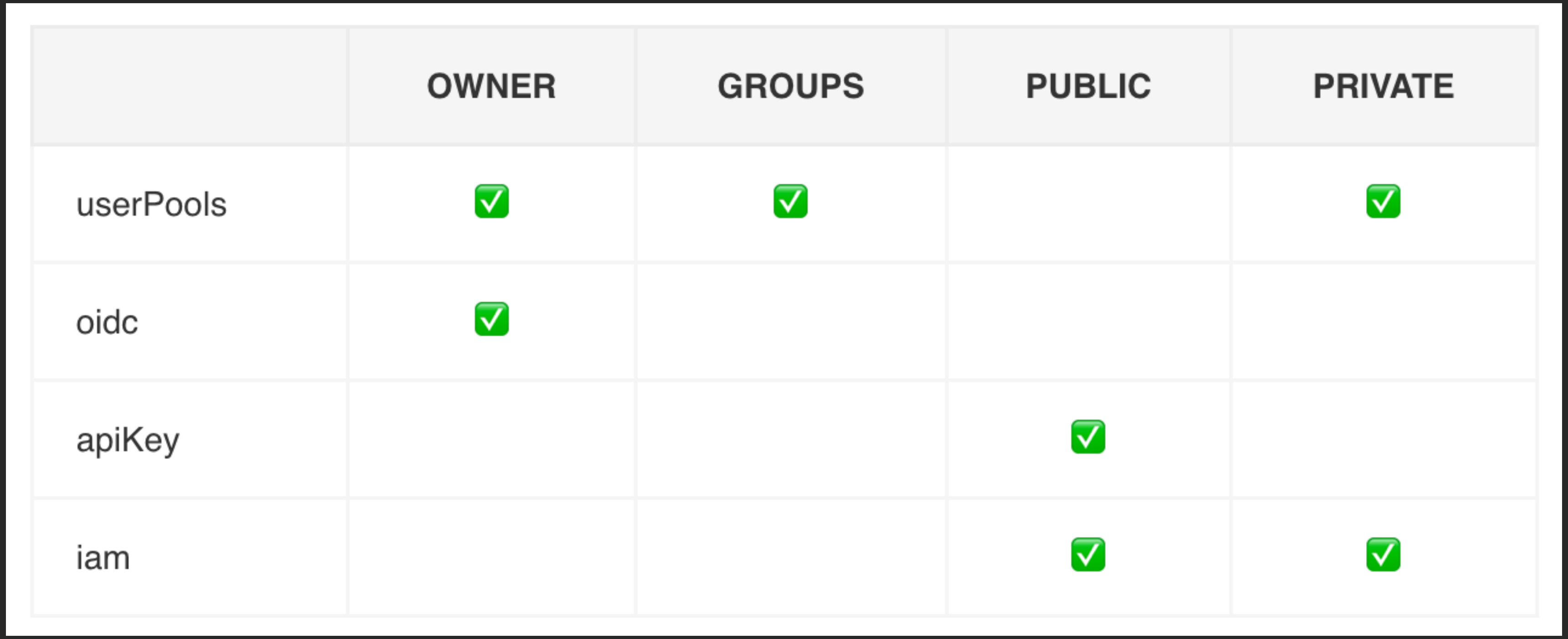
AppSync Multiple authorization types

Mix and match

- Cognito User Pools
- API Key
- OIDC
- IAM

New feature overview

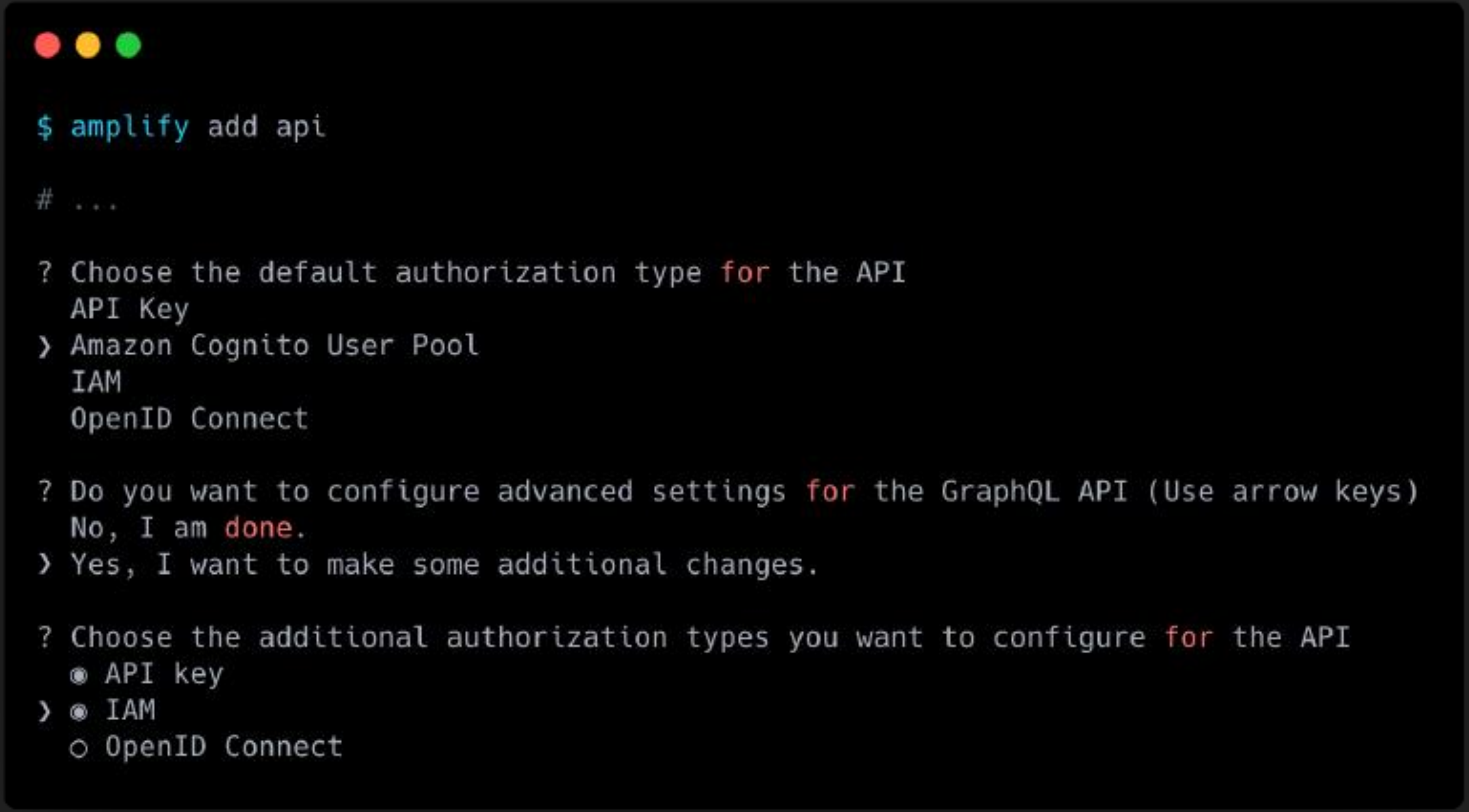
AppSync Multiple authorization types



	OWNER	GROUPS	PUBLIC	PRIVATE
userPools	✅	✅		✅
oidc	✅			
apiKey			✅	
iam			✅	✅

New feature overview

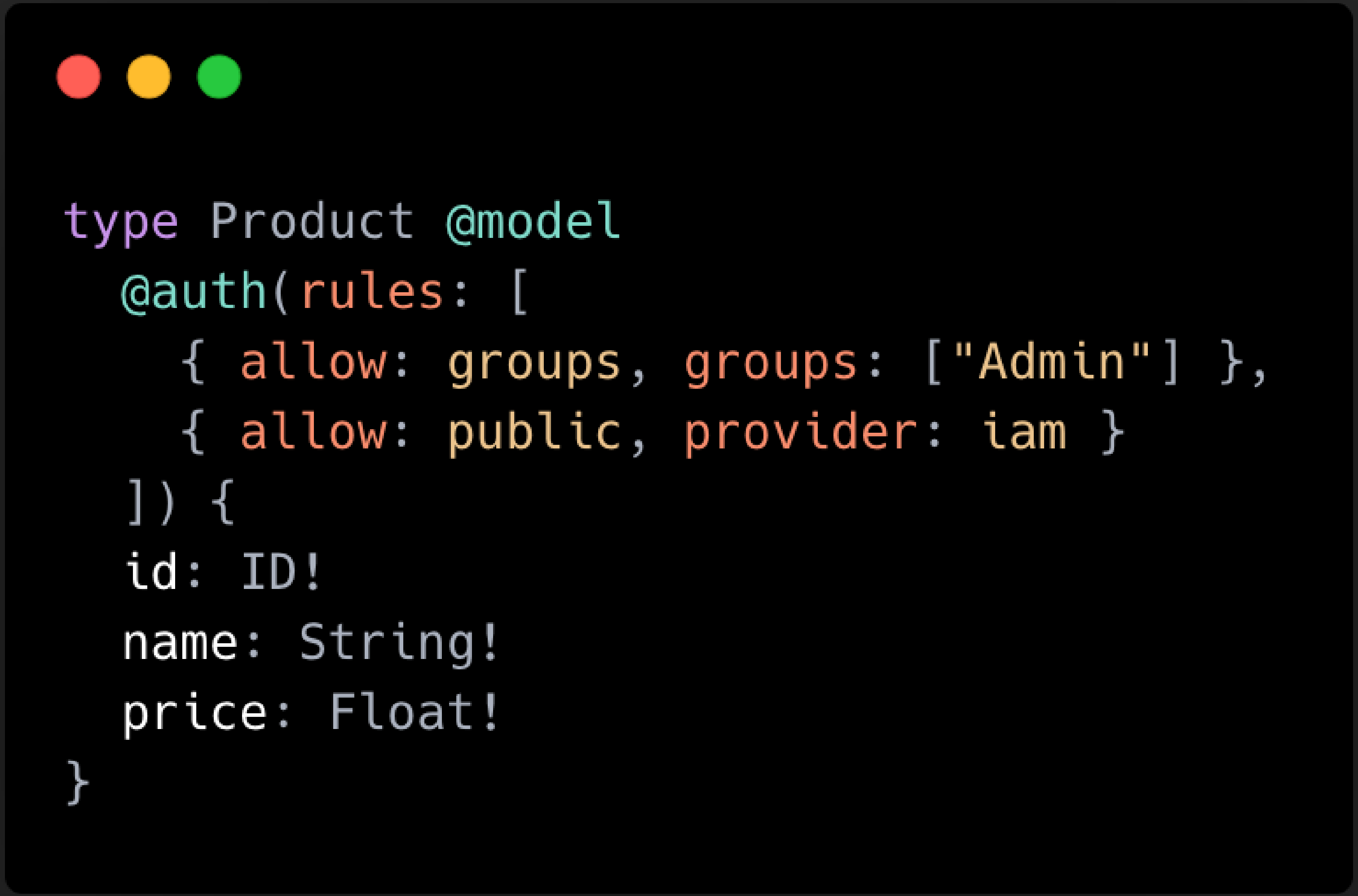
AppSync Multiple authorization types



```
$ amplify add api

# ...

? Choose the default authorization type for the API
  API Key
❯ Amazon Cognito User Pool
  IAM
  OpenID Connect

? Do you want to configure advanced settings for the GraphQL API (Use arrow keys)
  No, I am done.
❯ Yes, I want to make some additional changes.

? Choose the additional authorization types you want to configure for the API
  ◉ API key
❯ ◉ IAM
  ○ OpenID Connect
```

New feature overview

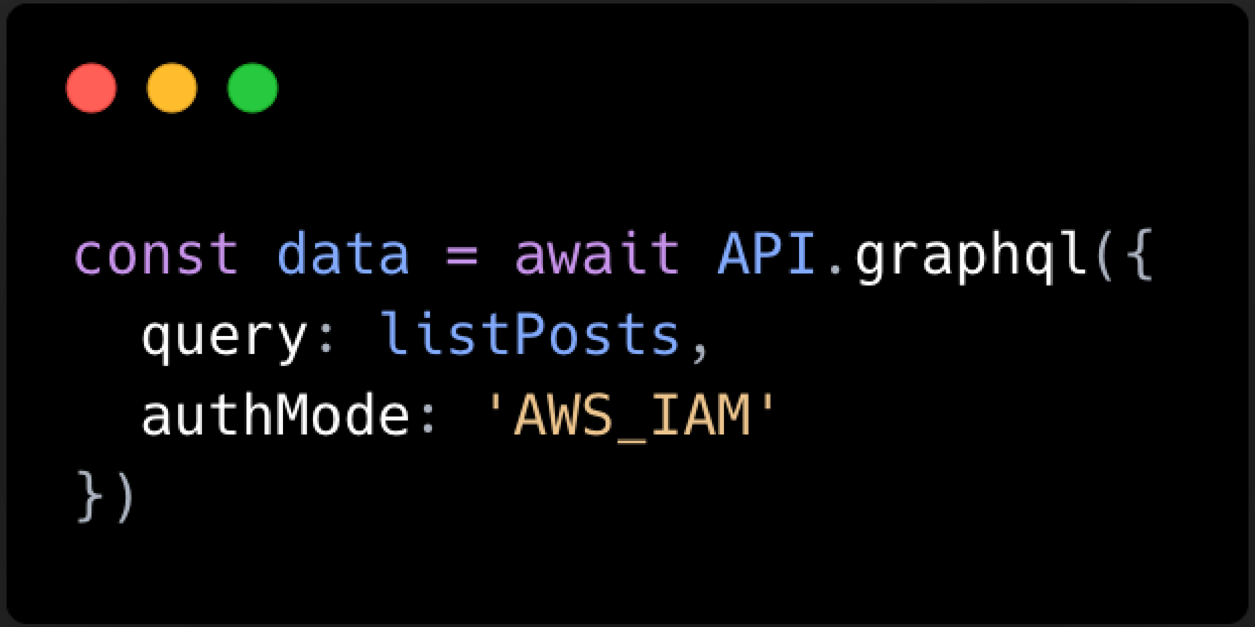
AppSync Multiple authorization types



```
type Product @model
  @auth(rules: [
    { allow: groups, groups: ["Admin"] },
    { allow: public, provider: iam }
  ]) {
  id: ID!
  name: String!
  price: Float!
}
```

New feature overview

AppSync Multiple authorization types



```
const data = await API.graphql({
  query: listPosts,
  authMode: 'AWS_IAM'
})
```

New feature overview

AppSync Lambda resolvers

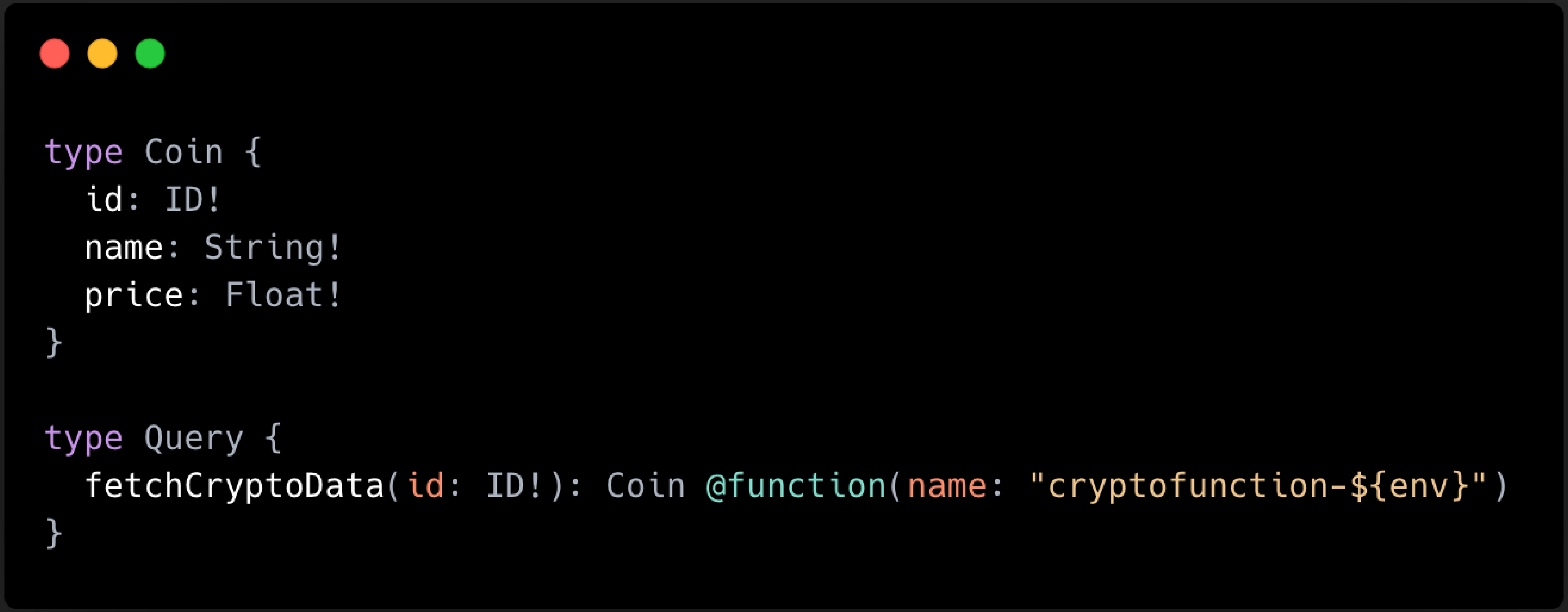
New feature overview

Lambda resolvers

- Enable Lambda functions as GraphQL resolvers
- Configure Lambda permissions directly from the CLI
- Mock and test Lambda resolvers locally via the CLI

New feature overview

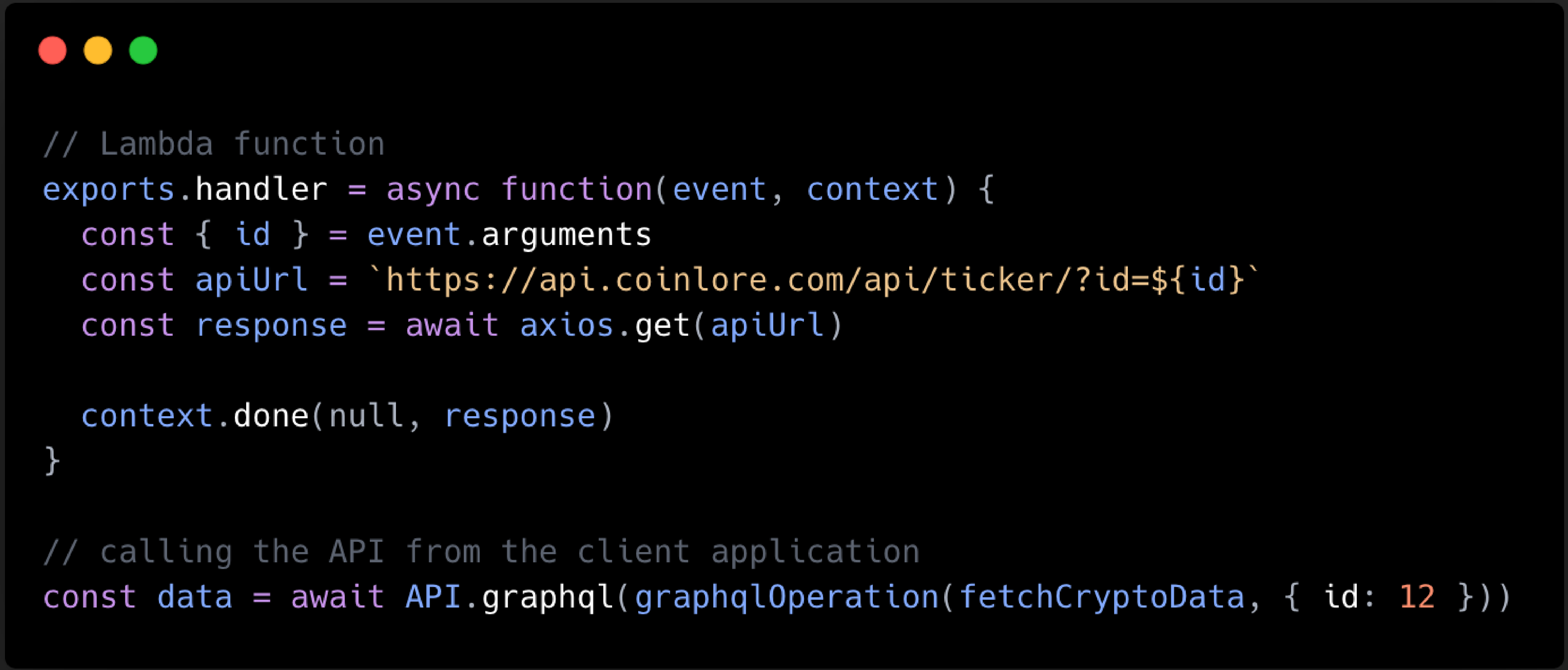
Lambda resolvers - schema



```
type Coin {
  id: ID!
  name: String!
  price: Float!
}

type Query {
  fetchCryptoData(id: ID!): Coin @function(name: "cryptofunction-${env}")
}
```

New feature overview

Lambda resolvers – Lambda function



```
// Lambda function
exports.handler = async function(event, context) {
  const { id } = event.arguments
  const apiUrl = `https://api.coinlore.com/api/ticker/?id=${id}`
  const response = await axios.get(apiUrl)

  context.done(null, response)
}

// calling the API from the client application
const data = await API.graphql(graphqlOperation(fetchCryptoData, { id: 12 }))
```

Tips and Best Practices

AWS Amplify

Tips and Best Practices

Enable authorization with @auth to protect models

AWS Amplify

Tips and Best Practices

Use local mocking and testing to quickly test things out

AWS Amplify

Tips and Best Practices

Take advantage of field-level authorization

AWS Amplify

Tips and Best Practices

Use multiple environments to test in production

AWS Amplify

Tips and Best Practices

Amplify Console branch previews

AWS Amplify

Tips and Best Practices

Get to know @key directives for additional access patterns

Amplify Console

Amplify Console

Git-based hosting

Deploys to globally available CDN

Deploy both front and back ends

Instant atomic deployments

Easy custom domains

Password-protected deployments

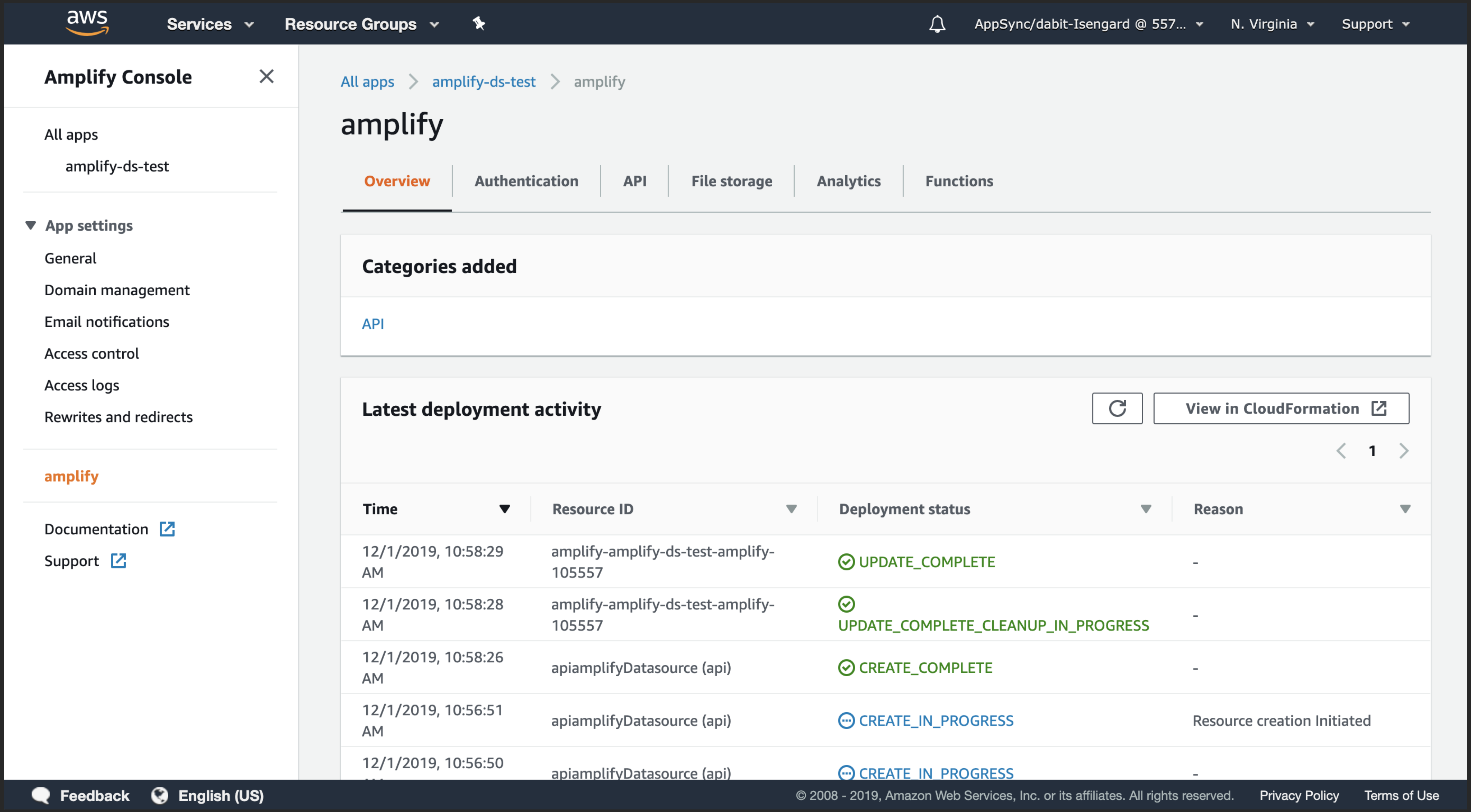
Amplify Console New Feature Overview

Amplify Console – New Features in 2019

- ✓ Full stack backend visibility
- ✓ PR previews
- ✓ CloudFormation support
- ✓ Incoming webhooks
- ✓ Instant cache invalidation
- ✓ Custom HTTP Headers
- ✓ Deploy via S3, Dropbox, or your desktop
- ✓ End-to-end testing
- ✓ Delta deployments
- ✓ Branch auto-detection
- ✓ Custom container support
- ✓ Live package updates
- ✓ Downloadable access logs

New feature overview

Full stack back end visibility



amplify

Categories added

API

Latest deployment activity

Time	Resource ID	Deployment status	Reason
12/1/2019, 10:58:29 AM	amplify-amplify-ds-test-amplify-105557	UPDATE_COMPLETE	-
12/1/2019, 10:58:28 AM	amplify-amplify-ds-test-amplify-105557	UPDATE_COMPLETE_CLEANUP_IN_PROGRESS	-
12/1/2019, 10:58:26 AM	apiamplifyDatasource (api)	CREATE_COMPLETE	-
12/1/2019, 10:56:51 AM	apiamplifyDatasource (api)	CREATE_IN_PROGRESS	Resource creation Initiated
12/1/2019, 10:56:50	apiamplifyDatasource (api)	CREATE_IN_PROGRESS	-

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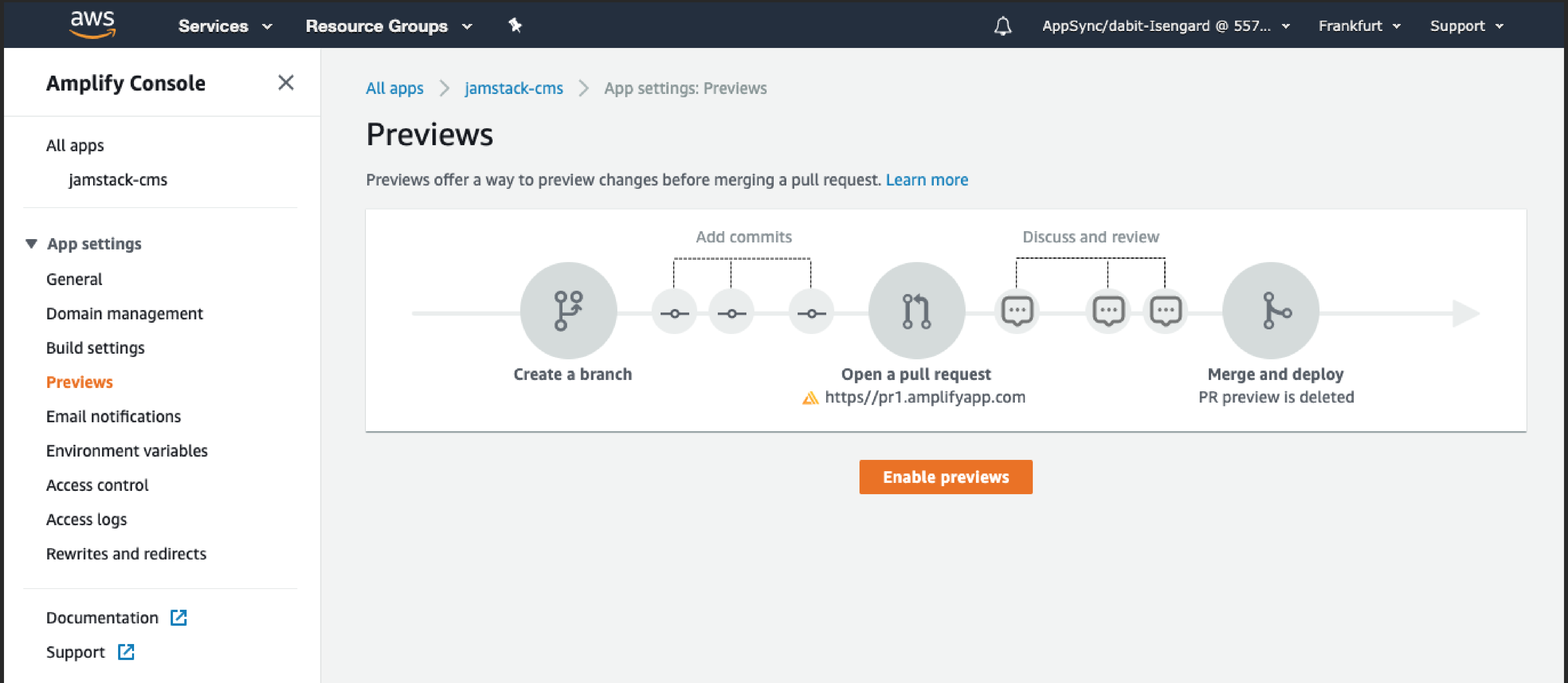
New feature overview

PR / Web Previews

New feature overview

PR / Web Previews

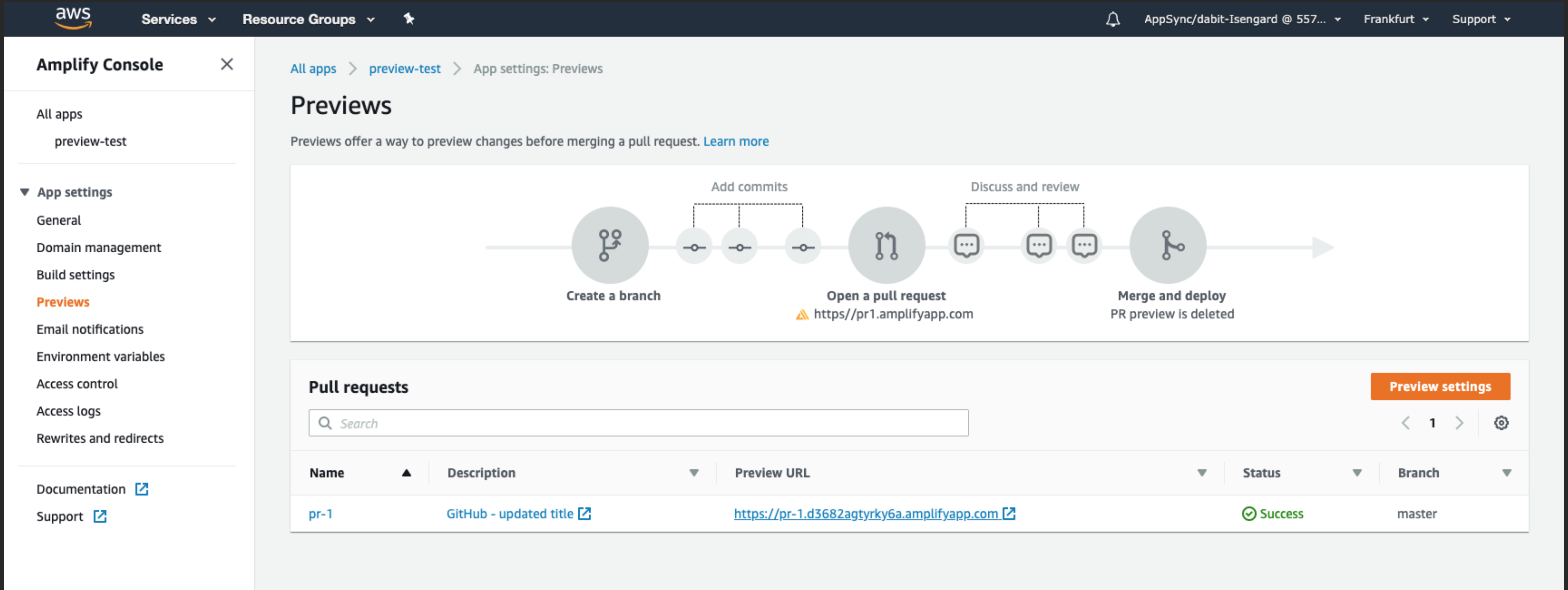


Previews

Previews offer a way to preview changes before merging a pull request. Learn more

New feature overview

PR / Web Previews



Previews

Previews offer a way to preview changes before merging a pull request. Learn more

Pull requests

Name	Description	Preview URL	Status	Branch
pr-1	GitHub - updated title	https://pr-1.d3682agtyrky6a.amplifyapp.com	✓ Success	master

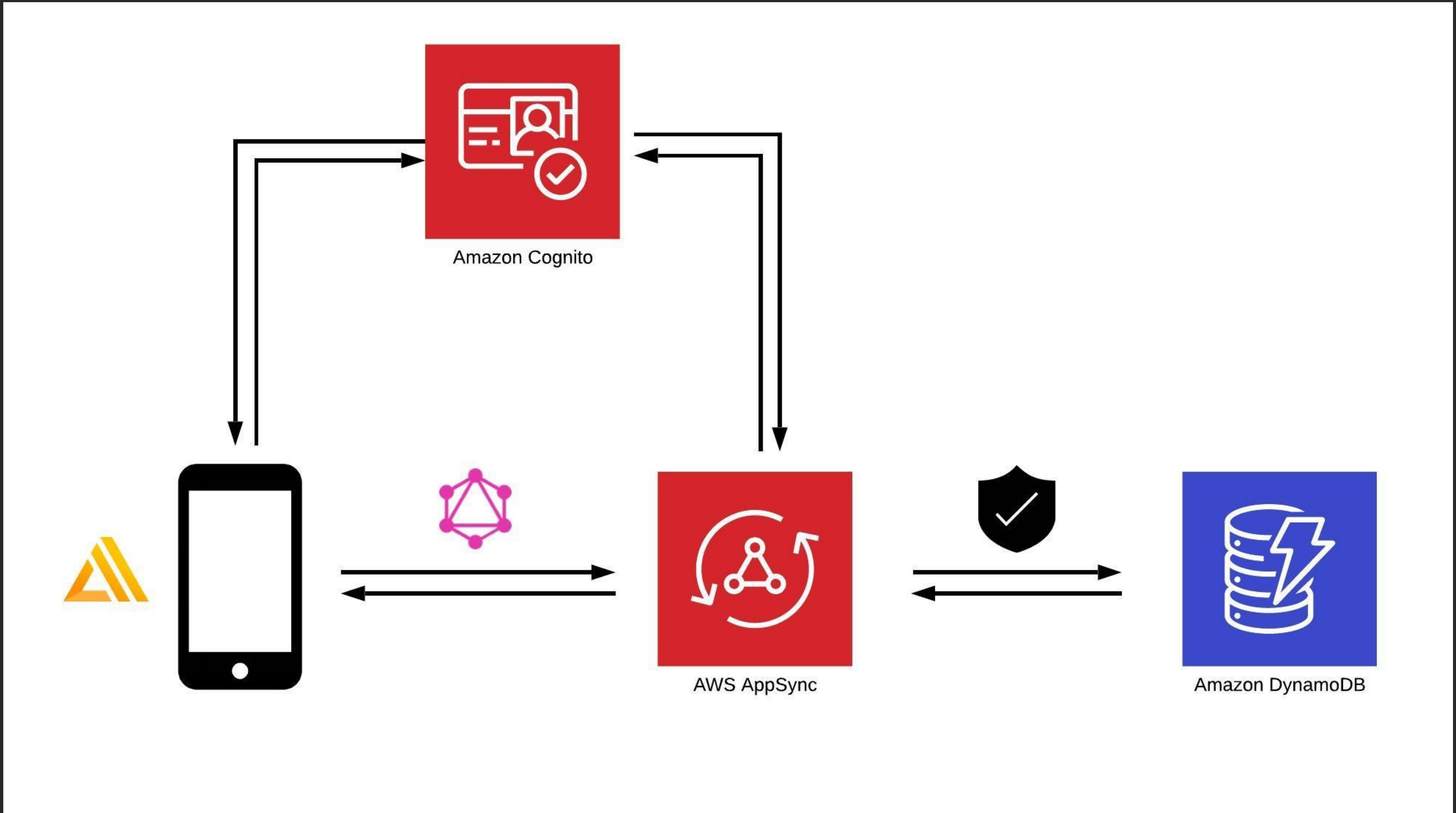
Demo

DEMO

Creating & mocking a music festival API

Music Festival API

- Create, read, update, delete, list performances
- Create, read, update, delete, list stages
- Only Admins can create mutations
- Anyone can read
- Mock / test locally
- Build this in 5 minutes


Amazon Cognito
AWS AppSync
Amazon DynamoDB

DEMO

- ✓ AppSync API
- ✓ DynamoDB Tables
- ✓ API authentication
- ✓ Authorization / fine-grained access controls

Thank you!

Nader Dabit

@dabit3

Please complete the session survey in the mobile app.

AWS re:Invent

aws