INNOVATE

MODERN APPLICATIONS EDITION

20 October, 2022

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Accelerate Flutter mobile application development with AWS

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Agenda

- Cross-platform development and Flutter
- Accelerate Flutter development with AWS
  - Flutter and AWS Amplify
  - Development
  - Testing
  - CI/CD
- Demo
- Next steps

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Cross-platform development and Flutter

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Cross-platform app development

Many platforms

Wider reach

Time to market

Reduced cost

Single code base

Maximum time to work on features

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Flutter for cross-platform apps

- Flutter is one of the most popular cross-platform development toolkits
- Deploy to multiple devices from a single codebase
- Flutter compiles to native code for fast performance
- Build and iterate quickly with Hot Reload
- Flutter is powered by Dart, a language optimized for fast apps on any platform
- Supported by AWS Amplify

Flutter

www.flutter.dev

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Accelerate Flutter development with AWS

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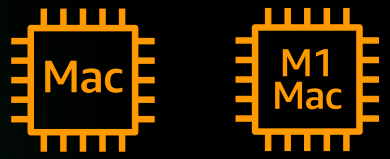
Code | Build | Test | Deploy



Amazon Elastic Compute Cloud (Amazon EC2) Mac instances

Android/IOS development

AWS CodeCommit

Fully managed private Git repos

AWS Amplify

Fully managed private Git repos

AWS Nice DCV

High-performance remote desktop

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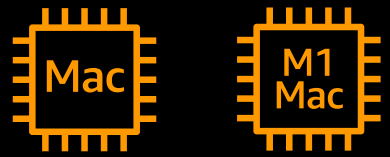
Code | Build | Test | Deploy

AWS CodeBuild

Managed build servers



Amazon EC2 Mac instances

For IOS build

AWS Systems manager

Automation

Amazon Simple Storage Service (Amazon S3) Artifacts storage

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Code → Build → **Test** → Deploy

AWS CodeBuild

Managed test servers

AWS Device Farm

Test on real devices

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Code → Build → Test → Deploy

AWS CodePipeline

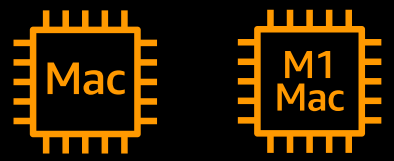
Automated release pipeline

AWS Lambda

Automated functions to PlayStore

AWS CodeDeploy

Fully managed deployment service



Amazon EC2 Mac instances

Automation to Appstore

aws

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Flutter with AWS Amplify

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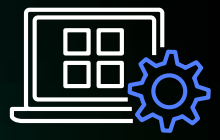
Build with AWS Amplify

Full-stack developer experience across 12 feature categories

Build



Configure AWS backends fast

Seamlessly connect frontends

CLI

Studio

Libraries

Feature categories

- Authentication
- DataStore
- Storage
- API (GraphQL & REST)
- Functions
- Geo
- Analytics
- PubSub
- Predictions
- Interactions
- Notifications
- Extensibility

Powered by AWS services such as
AWS AppSync (GraphQL API) and Amazon Cognito (Authentication)

aws

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Build feature-rich apps with Amplify Libraries

Authentication

Authentication APIs with prebuilt UI components for your app

Data store

On-device persistent storage that automatically synchronizes data between you apps and the cloud.

API

HTTP requests using REST and GraphQL with support for real-time data

Analytics

Track user sessions, custom user attributes and in-app metrics

PubSub

Connect your app to message-oriented middleware on the cloud

Predictions

Add MI/ML capabilities to your app powered by cloud services

Interactions

Conversational bots powered by deep learning technologies

Geo

Location-aware features and maps powered by Amazon Location Services

Notifications

Push notifications with campaign analytics and targeting

Storage

Manage user content securely in public, protected, and private storage.

XR

Work with augmented reality and virtual reality content in your apps

Extensibility

Extend the power of Amplify with 175+ AWS services

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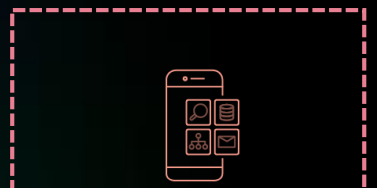
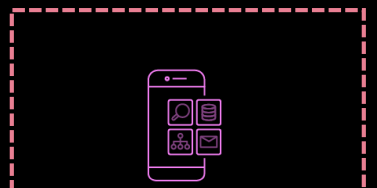
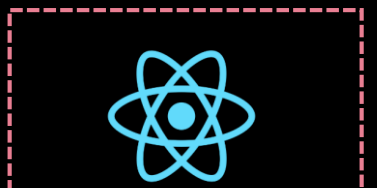
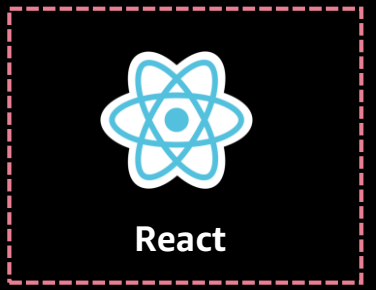
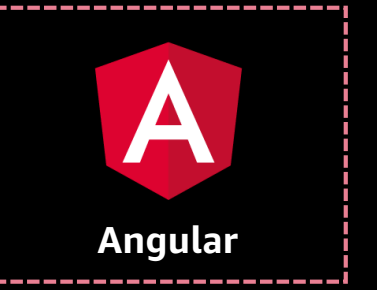
AWS Amplify Libraries











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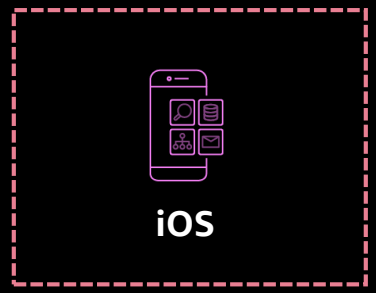
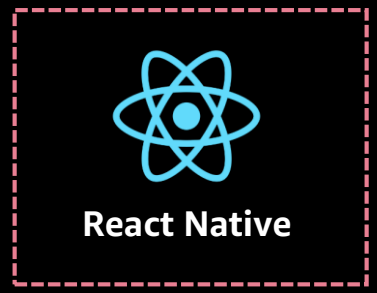
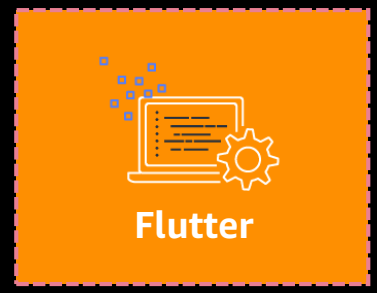
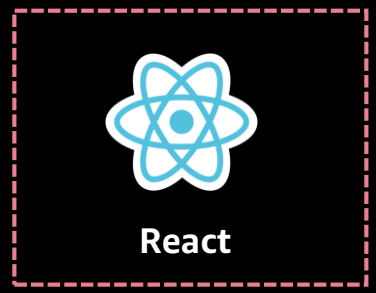
AWS Amplify Libraries









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Development for Flutter

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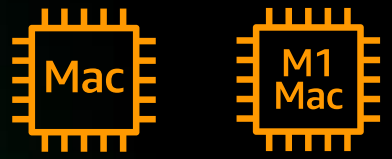
Development machines on AWS

DEVELOPMENT FROM ANYWHERE USING AMAZON EC2



Amazon EC2 Mac instances

Android/IOS development

Amazon EC2 with NICE DCV

High-performance remote desktop

aws

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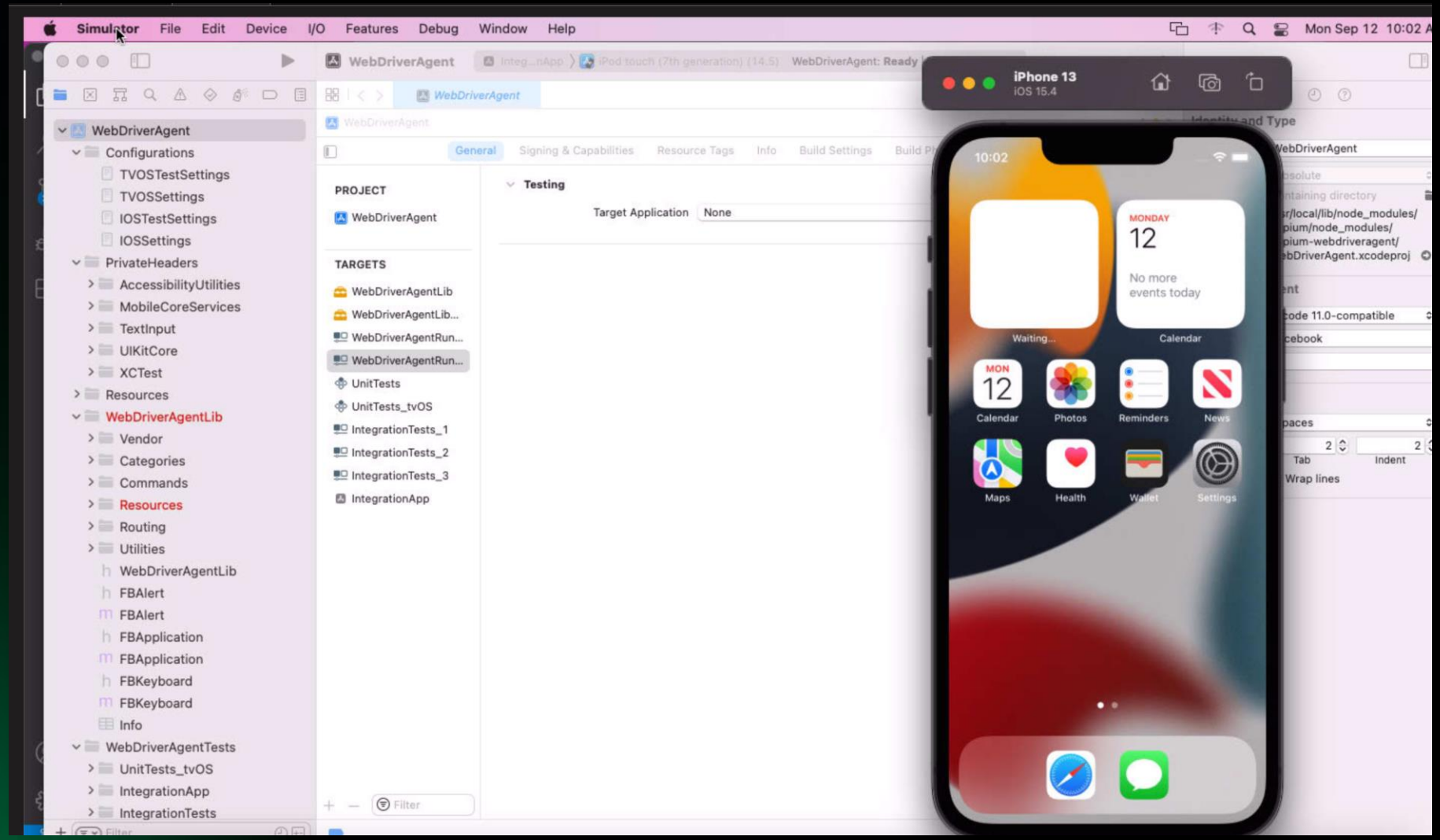
Amazon EC2 Mac instance for development



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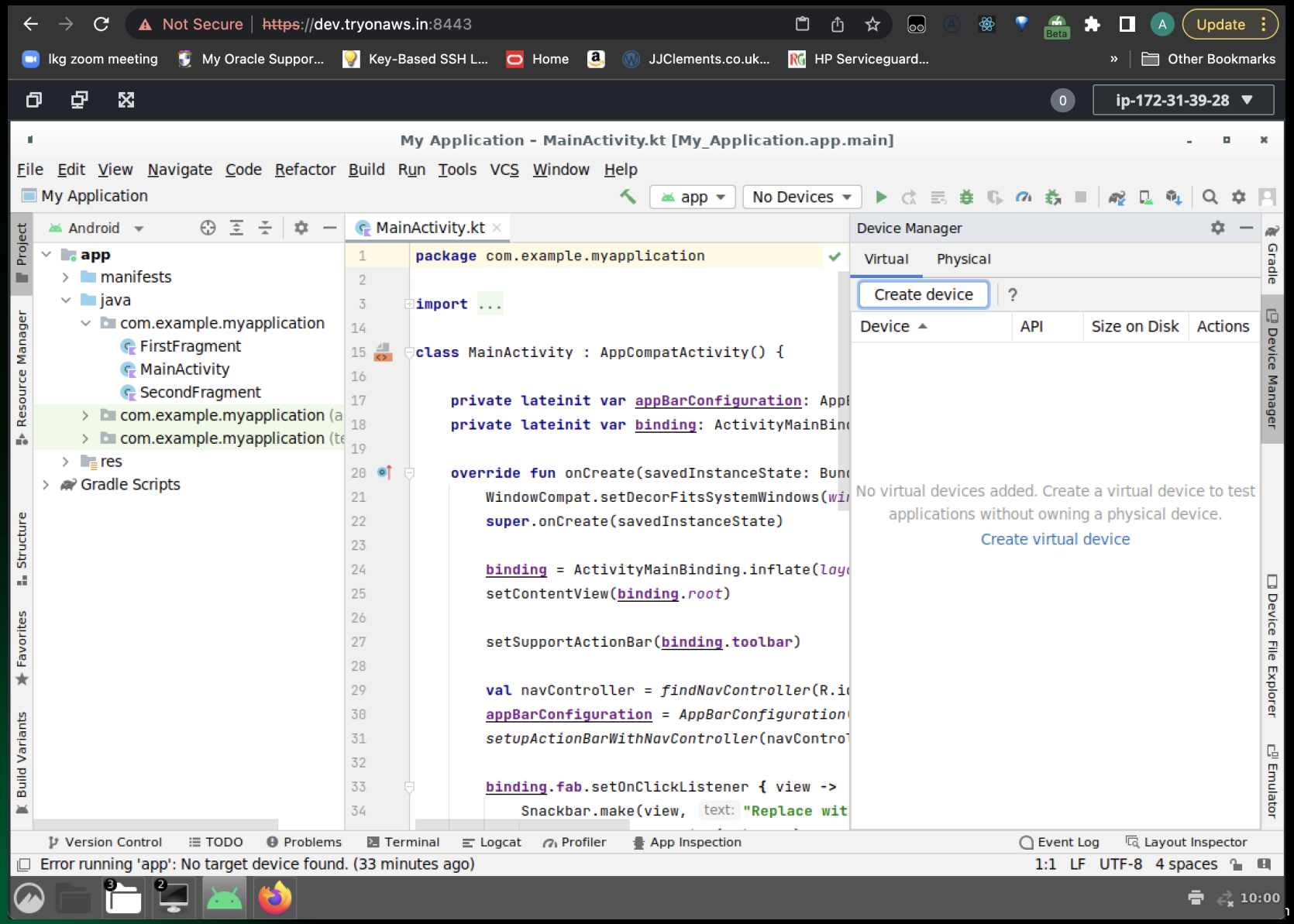
Ubuntu with NICE DCV streaming



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Testing with AWS Device Farm

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Challenges with mobile app testing

Device and OS fragmentation

Device lab maintenance

Test execution with device connectivity

Test reporting and artifacts

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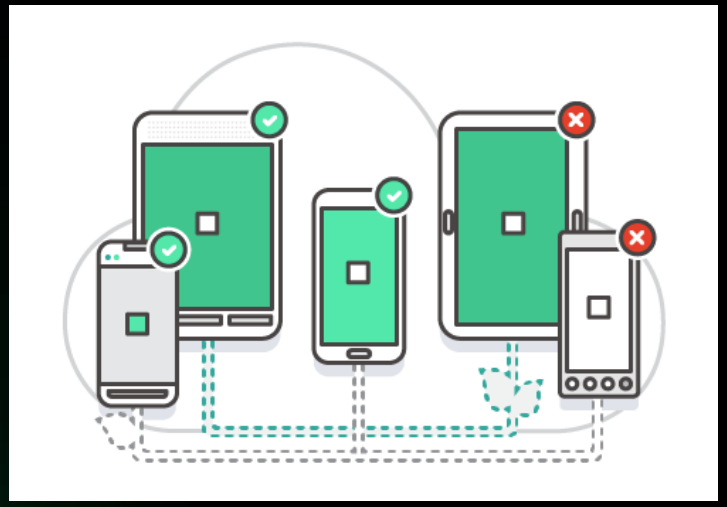
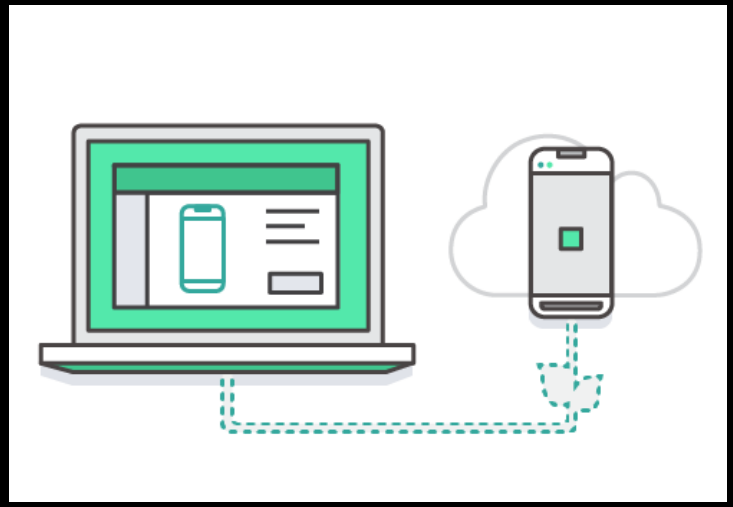
What is AWS Device Farm?



Automated testing

Test your app in parallel against a large collection of physical devices in the AWS Cloud



Remote Access

Gesture, swipe, and interact with devices in real time, directly from your web browser or local host

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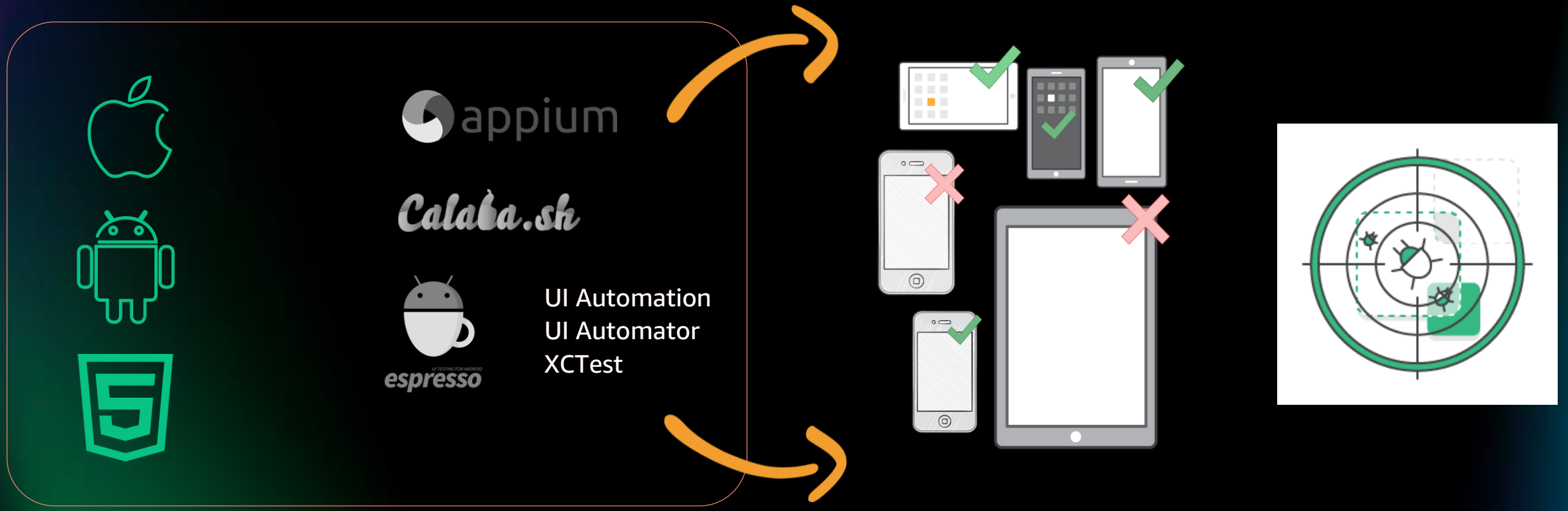
Automation testing on AWS Device Farm



Your App

Popular Test Frameworks

AWS Device Farm

Detailed Test Reports

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Continuous Integration and Continuous Delivery (CI/CD)

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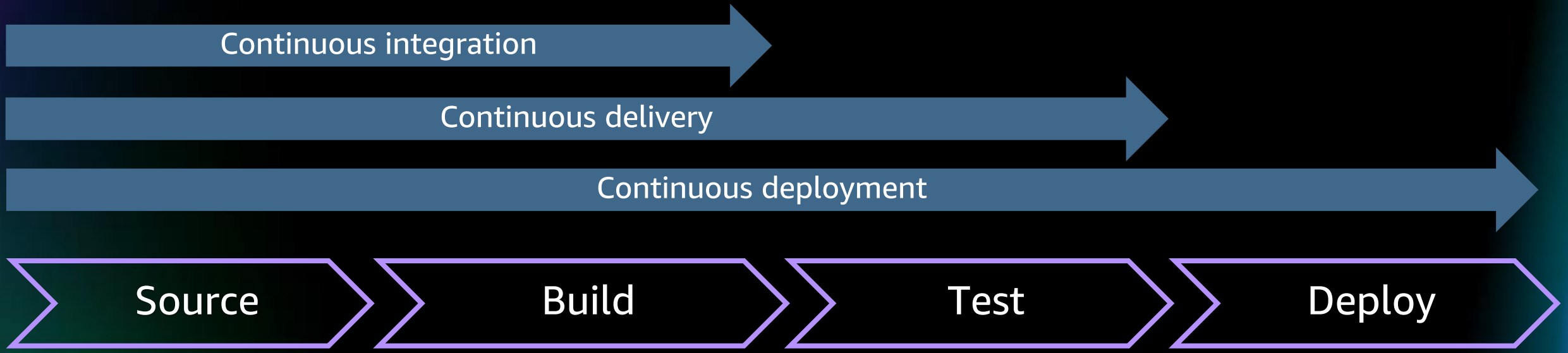
CI/CD in theory



- Source code
- Peer review

- Compilation
- Unit tests
- Lint and style checks
- Quality gates

- Integration tests
- Load tests
- UI tests
- Security tests

- Deploy to production
- Monitoring

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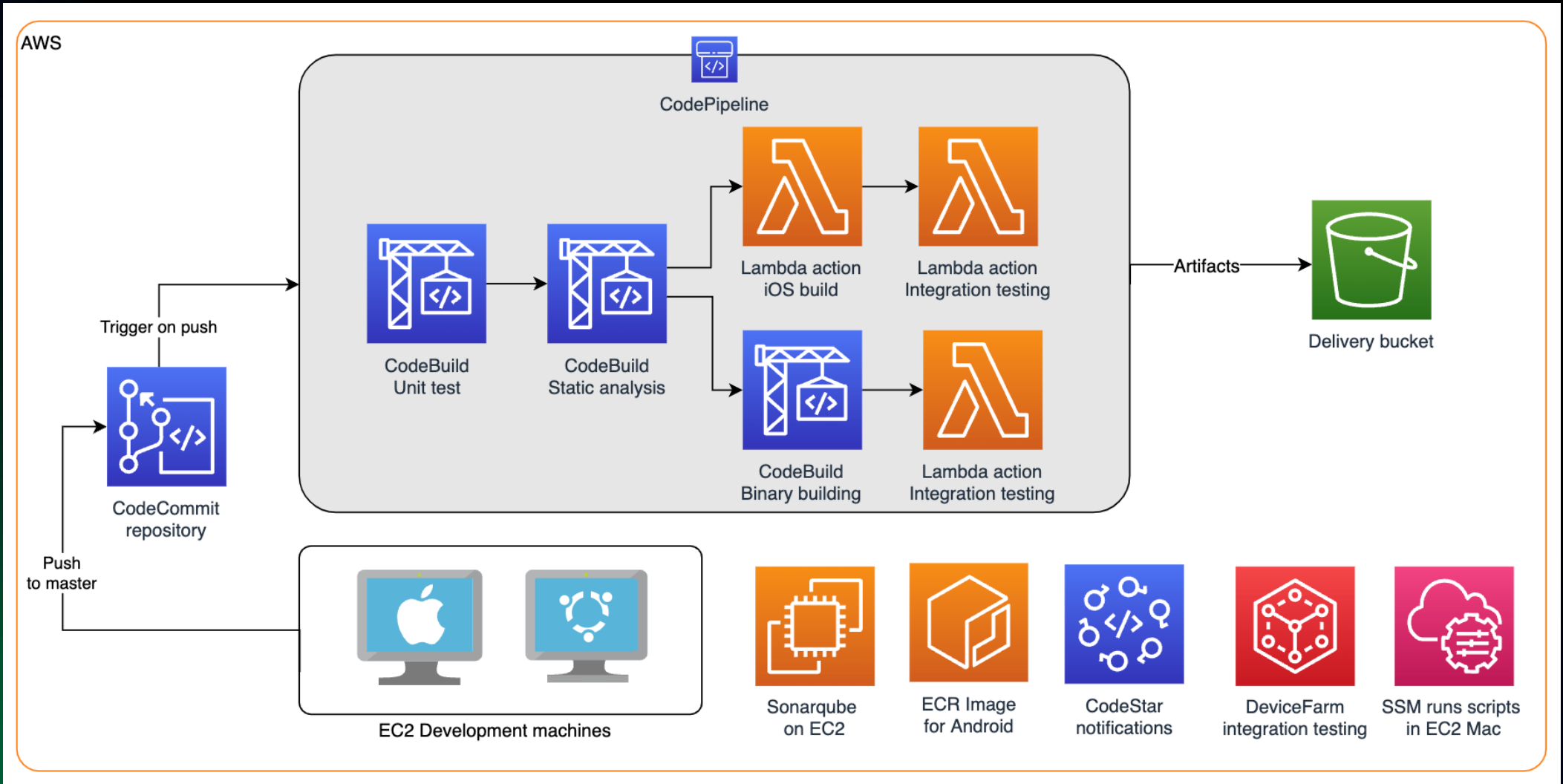
Example : Flutter CI/CD setup



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Demo

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Key takeaways

- Flutter is one of the top cross-platform mobile app development platforms.
- AWS Amplify can help significantly accelerate Flutter development with AWS.
- You can build complete CI/CD pipelines on AWS for both iOS and Android apps.
- AWS Device Farm allows you to do integration and interactive tests on real mobile devices.
- You can use Amazon EC2 for Mac and Linux remote development machines.

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Next steps / Resources

- Try the setup yourself from here
- AWS Amplify resources
  - Discord: https://discord.com/invite/amplify
  - Github: https://github.com/aws-amplify
  - Community: https://amplify.aws/community/
- Experience Amazon EC2 mac instance - workshop
- AWS CI/CD for mobile applications – workshop
- AWS Device farm – resources

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Visit the Modern Applications resource hub

Dive deeper with these resources to help you develop an effective plan for your modernization journey.

- Build modern applications on AWS
- Business value of cloud modernization
- An introduction to event-driven architectures
- Accelerate full-stack web and mobile app development
- Determining the total cost of ownership: Comparing serverless and server-based technologies
- Building event-driven architectures with AWS
- Continuous learning, continuous modernization

https://tinyurl.com/modern-apps-aws

Visit resource hub

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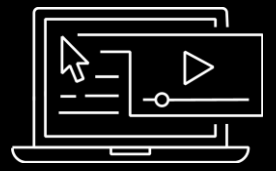
AWS Training and Certification

Get started with Free Digital Training for you and your team today

Achieve key milestones and plan your next steps with the AWS Modern Application skills training



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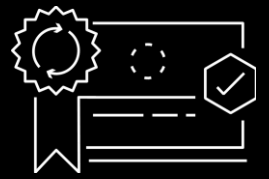
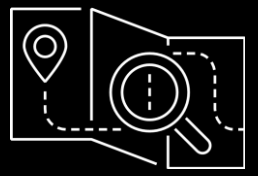


Earn an industry-recognized credential:
AWS Certified Developer – Associate
AWS Certified DevOps – Professional



Create a self-paced learning roadmap
AWS ramp-up guide - Developer
AWS ramp-up guide - DevOps

aws

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