Welcome and thank you!

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Agenda

Day 1

- Continuous Integration Continuous Delivery (CICD) Intro
- CICD Tools and services
- Building on AWS

Day 2

- Automation
- Integrating Services together
- Building an End to End environment

Day 3

- Game Day

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Housekeeping

:+1: :-1: :raising_hand:

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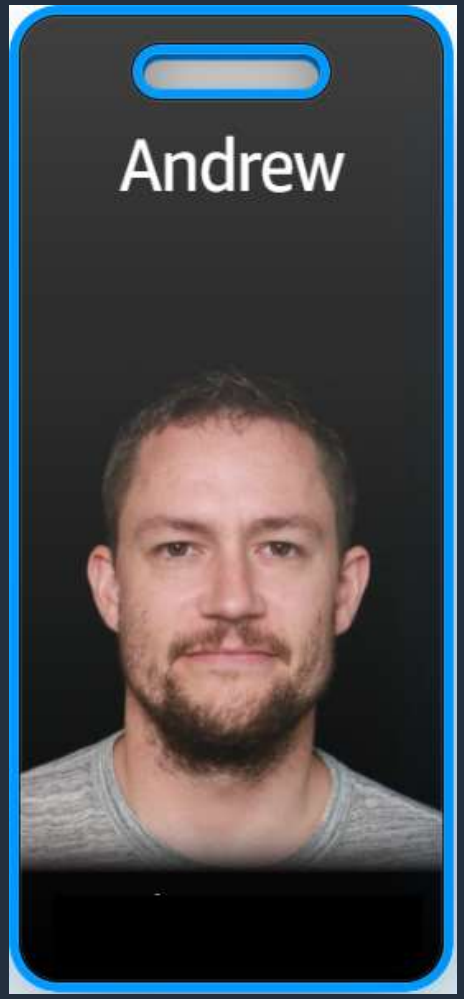
Instructors



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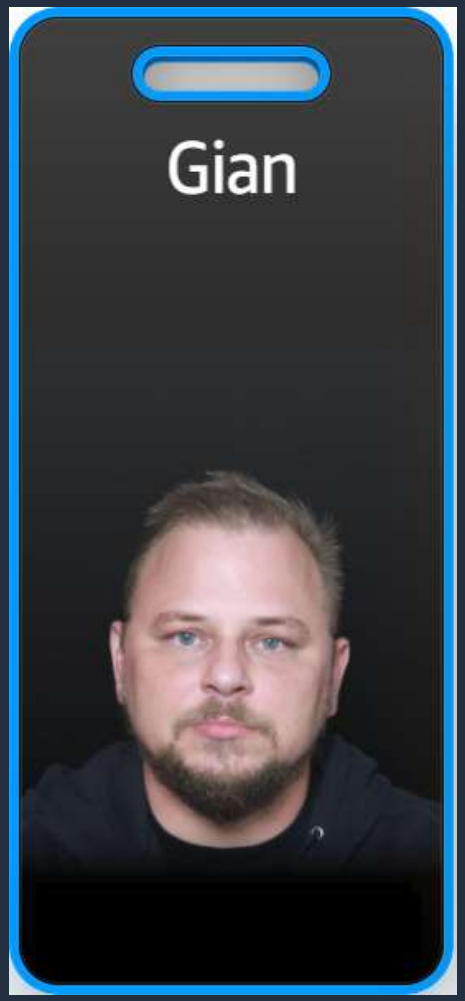

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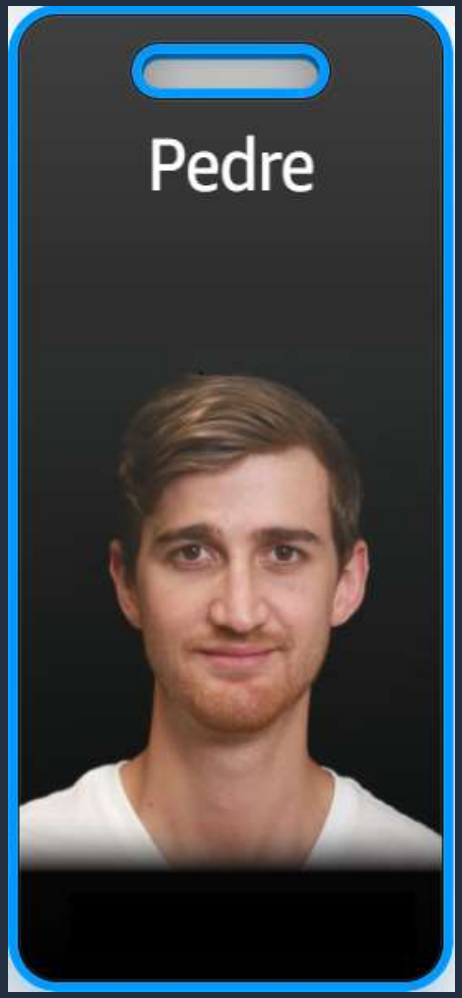

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Day 1

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Day 1 - Agenda

- Introduction to the Team
- Introduction to Continuous Integration Continuous Delivery (CICD)
- DevOps background
- Tools
- Environment
- Exploring and Deploying
- Exploring AWS Services
- Deploy to newly created environments

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What is a Cloud Support Engineering (CSE)?

The front line of AWS' technical support. We are customer facing.

Should a customer have an issue with a service and they have support, we are who they speak to.

Multiple teams, each with specific focus areas.

What do we do? A surprising amount:

- Customer interactions
- Training
- Learning is part of the job
- Hiring

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What do we do as CSEs - Deployment

We assist customers to develop services and technologies built on top of AWS Cloud Platform

- CloudFormation, Elastic Beanstalk, OpsWorks (Infrastructure, applications and configuration orchestration)
- CodeDeploy, CodePipeline, CodeCommit, CodeArtifact, Codebuild (CI/CD pipelines)
- ECS and EKS (container orchestration)

Apart from working on a broad spectrum of technical issues, we also work actively:

- Coaching and mentoring new hires
- Developing and delivering trainings
- Recruiting, interviewing and participating on the hiring process

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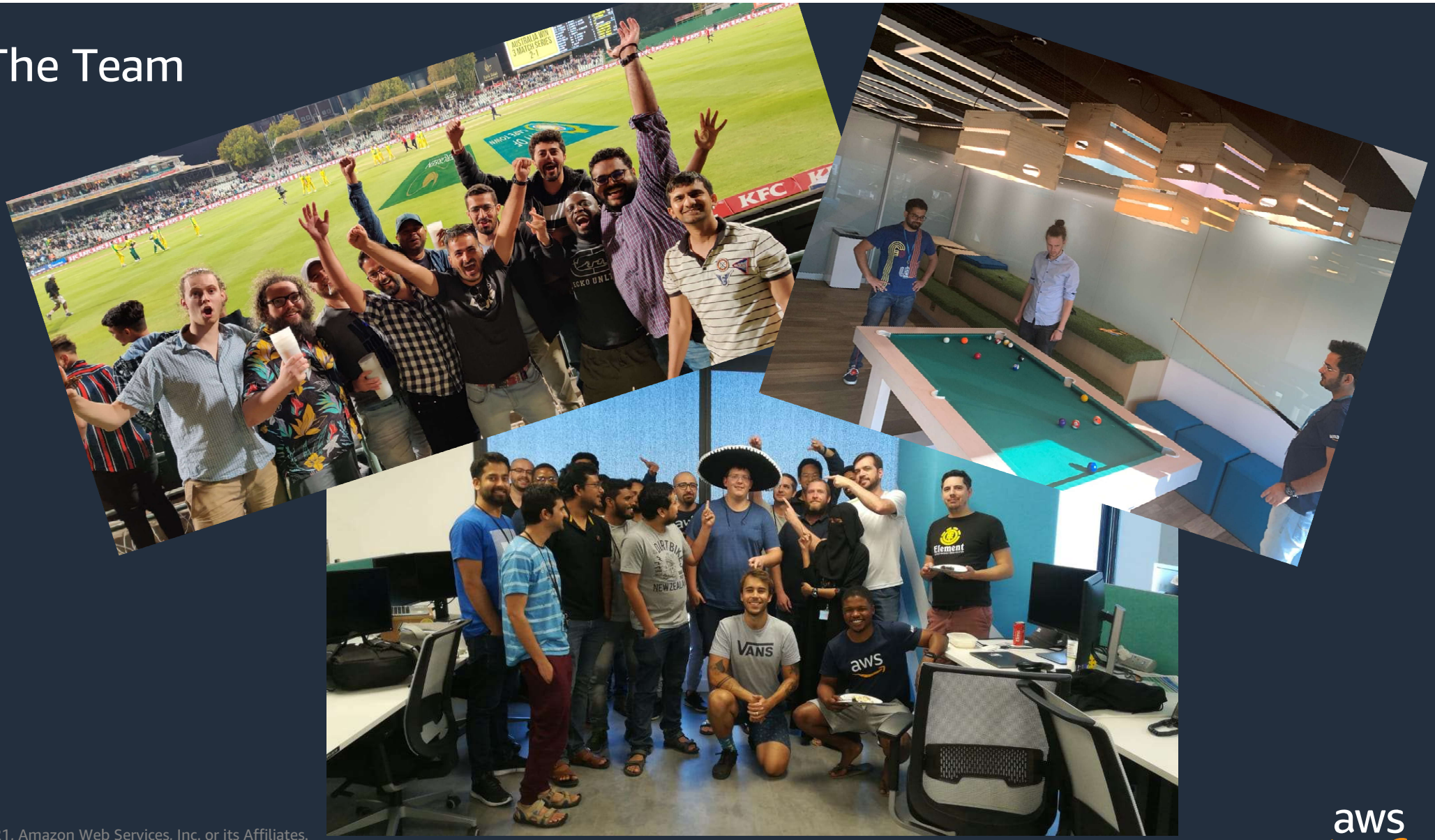
The Team



Before we get started

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Setting up AWS Account and Environment

Login into your AWS Account

1. Navigate to: https://dashboard.eventengine.run/login
2. Enter the team hash provided to you on arrival
3. Click the AWS Console button
4. Click the Open AWS Console button to log in to the account
5. Optionally, credentials are provided for CLI access
6. Please let us know if there are any log in issues
7. One of the online engineers will be happy to assist

Note

The account will be active through out Day 1 and Day 2.

The accounts will be reset for Day 3 and then closed after the end of the Event.

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Setting up the environment

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Launching the Lab Environment

Services:

- **Cloud9**: AWS Cloud9 is a cloud-based integrated development environment (IDE) that lets you write, run, and debug your code with just a browser. It includes a code editor, debugger, and terminal.
- **IAM**: Manages access to AWS services and resources securely. Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.
- **VPC**: Amazon Virtual Private Cloud (Amazon VPC) is a service that lets you launch AWS resources in a logically isolated virtual network that you define.

AWS CI/CD VLS Repository

Outcomes:

- Launch a Cloud9 environment
- Basic Understanding of IAM
- Understanding of the VPC

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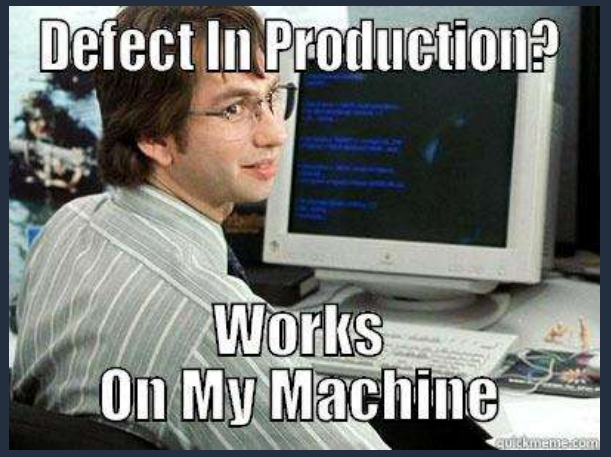
Introduction to Continuous Integration/Continuous Deployment (CI/CD)

DevOps background

Teams worked in silos Dev (Developers) and Ops (Operations) worked in different departments.
All the info was simply thrown over the wall and each group would blame other for the mishaps and mistakes.

DevOps aims to simplify repetitive processes through automation:

- Ensures better reliability and stability of products
- Improved deployment frequency
- Faster time to market
- Lower failure rate of new releases
- Shortened lead time between fixes
- Faster mean time to recovery



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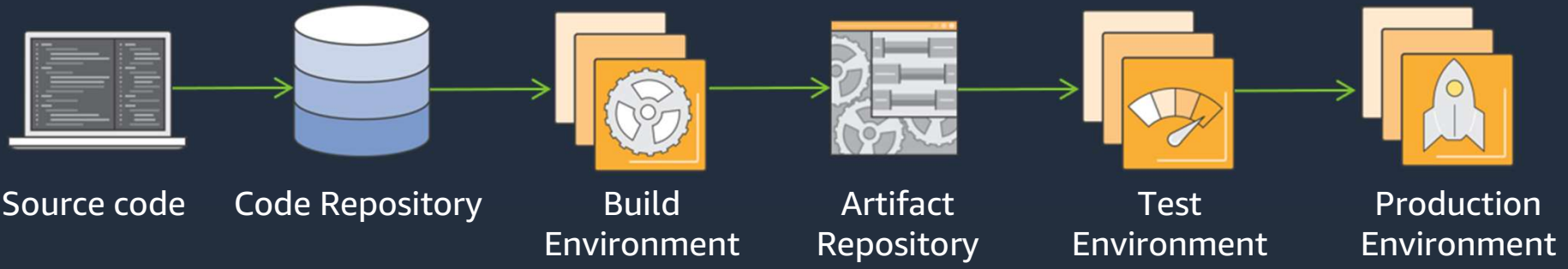
Introduction to Continuous Integration/Continuous Deployment (CI/CD)

Software Development Lifecycle



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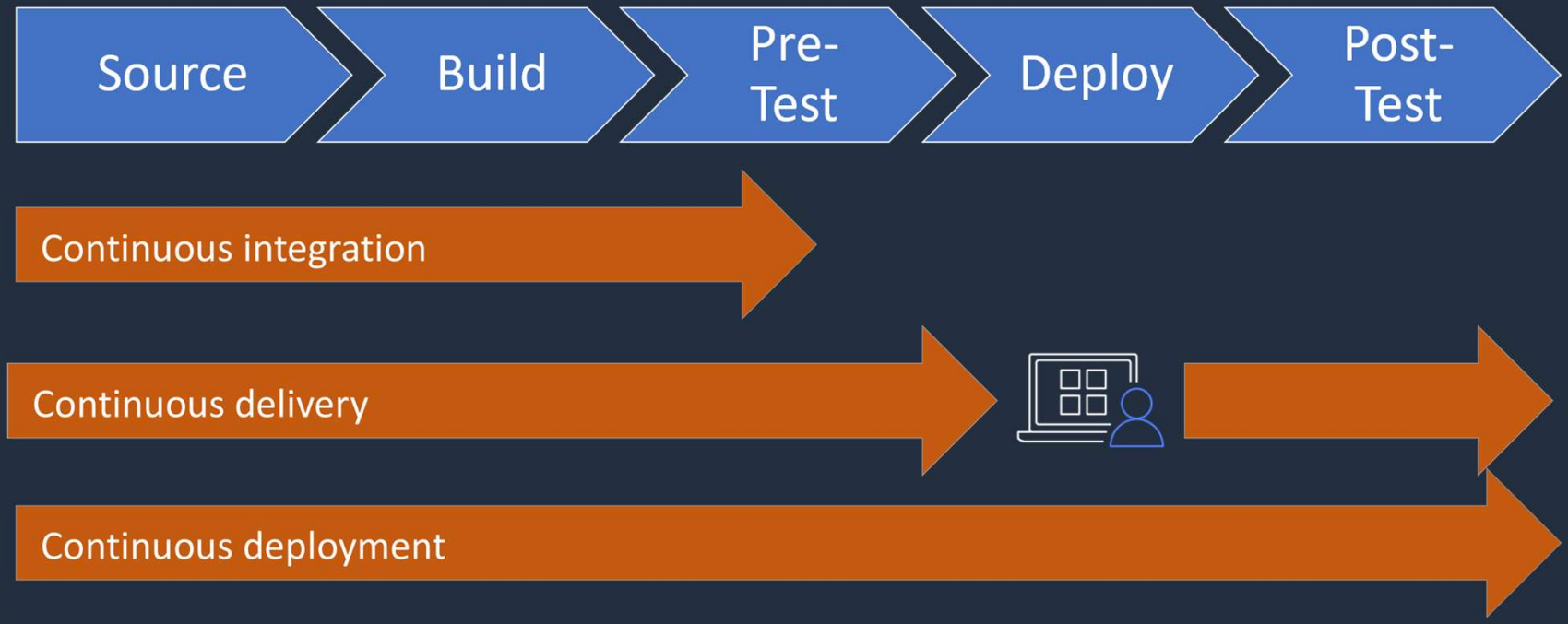
Introduction to CI/CD

Continuous Integration, Delivery and Deployment



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Introduction to CI/CD

Continuous Integration Goals

1. Automatically kick off a new release when new code is checked in
2. Build and test code in a consistent, repeatable environment
3. Continually have an artifact ready for deployment
4. Continually provide feedback when build fails

Continuous Deployment goals

1. Automatically deploy new changes to staging environments for testing (Delivery)
2. Deploy to production safely without impacting customers
3. Deliver to customers faster:
    - Increase deployment frequency
    - Reduce change lead time
    - Reduce failure rate

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Introduction to CI/CD

AWS CodeCommit

- Fully managed source-control service that hosts secure Git-based repositories
- Allows teams to collaborate on code in a secure and highly scalable ecosystem
- Automatically encrypts your files in transit and at rest
- Integrated with AWS Identity and Access Management (IAM)

Third-party code repositories

GitHub

Atlassian Bitbucket

GitLab

git private repo

Integrates with AWS CodeBuild and AWS CodePipeline

Integrates with AWS CodeBuild and AWS CodePipeline

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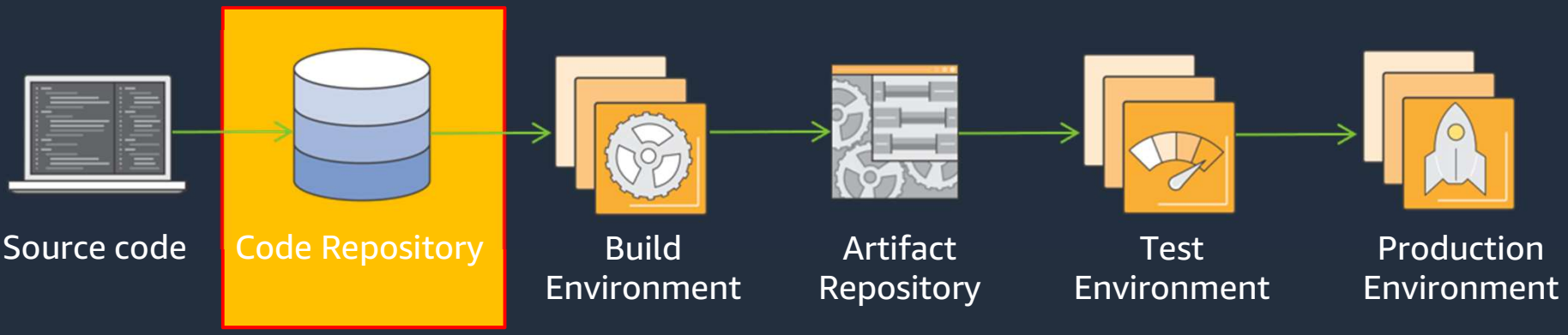

Lab 1 CodeCommit:

- This lab will provide an introduction into using CodeCommit for version control.
- Outcomes:
  - Creating and using a repository
  - Start and manage a new branch
  - Push files to CodeCommit as commits

https://github.com/awslabs/aws-cicd-workshop-cpt/tree/main/labs/01-repo

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Before we move on, any questions?

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Let's take a break while it runs
(we will be back in 10 minutes)

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Introduction to CI/CD

AWS CodeBuild

- Fully managed build service that can compile source code, run tests, and produce software packages
- Scales continuously and processes multiple builds concurrently
- Each build runs in a new Docker container for a consistent, immutable environment
- Can consume environment variables from AWS Systems Manager Parameter Store- Can run in your VPC and locally
- Supports dependency caching

Third-party CI/CD Tools

NEVERCODE · Bamboo · CODESHIP · Travis CI · Spinnaker · Jenkins · GitLab · Buildbot · circleci · wercker · TeamCity · SEMAPHORE

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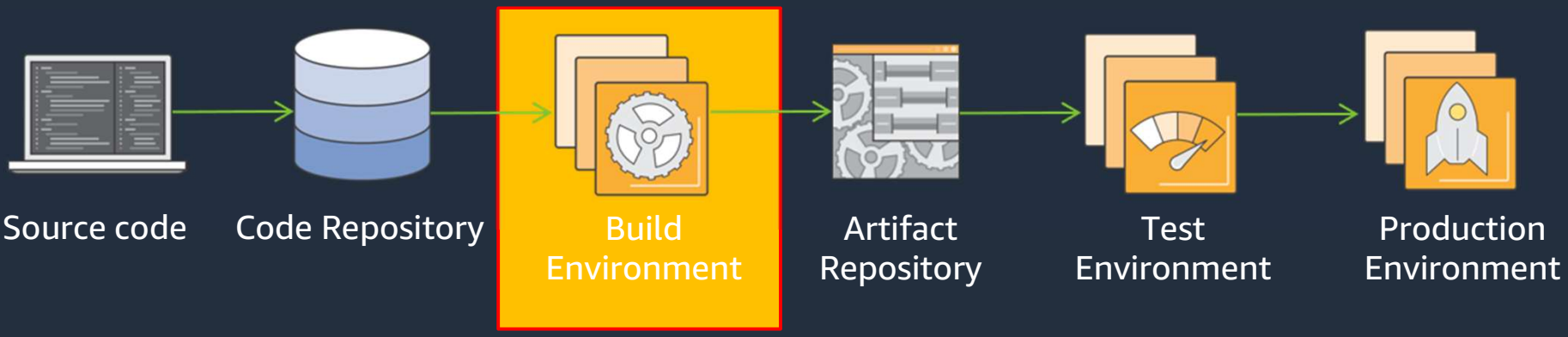

Lab 2 CodeBuild:

- This lab will provide an introduction into using CodeBuild as a build/testing server.
- Outcomes:
  - Create IAM role for CodeBuild project
  - Create a CodeBuild project
  - Start a build within the project
  - Running a build vs CodePipeline triggered builds
  - Troubleshooting a build/viewing logs and phase details

https://github.com/awslabs/aws-cicd-workshop-cpt/tree/main/labs/02-build

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Before we move on, any questions?

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Let's take a break while it runs
(we will be back in 10 minutes)

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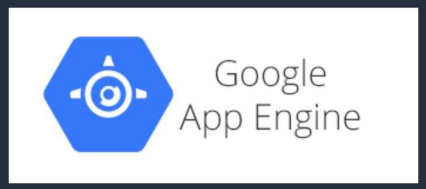
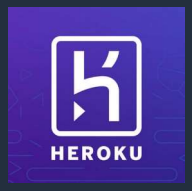
Introduction to CI/CD

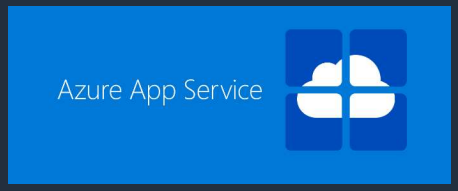
AWS Elastic Beanstalk

- Supports web applications written in many popular languages and frameworks (Java, .NET, Node.js, PHP, Ruby, Python, Go, and Docker)
- Simple deployment methods and deployment options
- Unified user interface to monitor and manage the health of your applications.
- Leverages Elastic Load Balancing and Auto Scaling to automatically scale the application out of the box.
- Supports customization of the every aspect of the environment.

Similar third party Offerings







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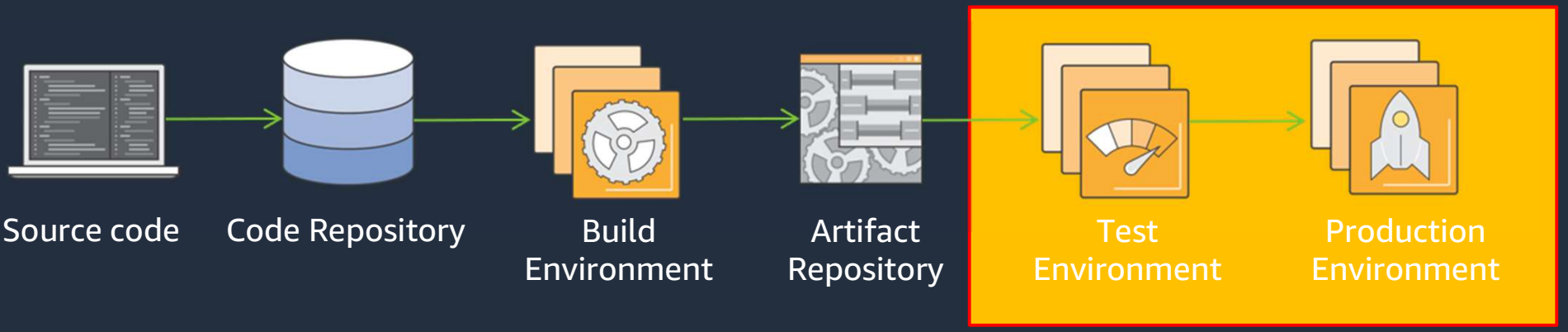

Lab 3 Elastic Beanstalk:

- This lab will provide an introduction into using Elastic Beanstalk to host applications.
- Outcomes:
  - Create One Beanstalk Application
  - Create and Deploy to Two Beanstalk environments (Blue and Green) inside the Beanstalk Application
  - Switch between the two environments

https://github.com/awslabs/aws-cicd-workshop-cpt/tree/main/labs/03-beanstalk

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Before we move on, any questions?

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Recap

- Gained an understanding of DevOps and the available tools
- Learnt what CICD means
- Explored AWS Services
- Built basic components and used a couple of AWS services that explore these principles

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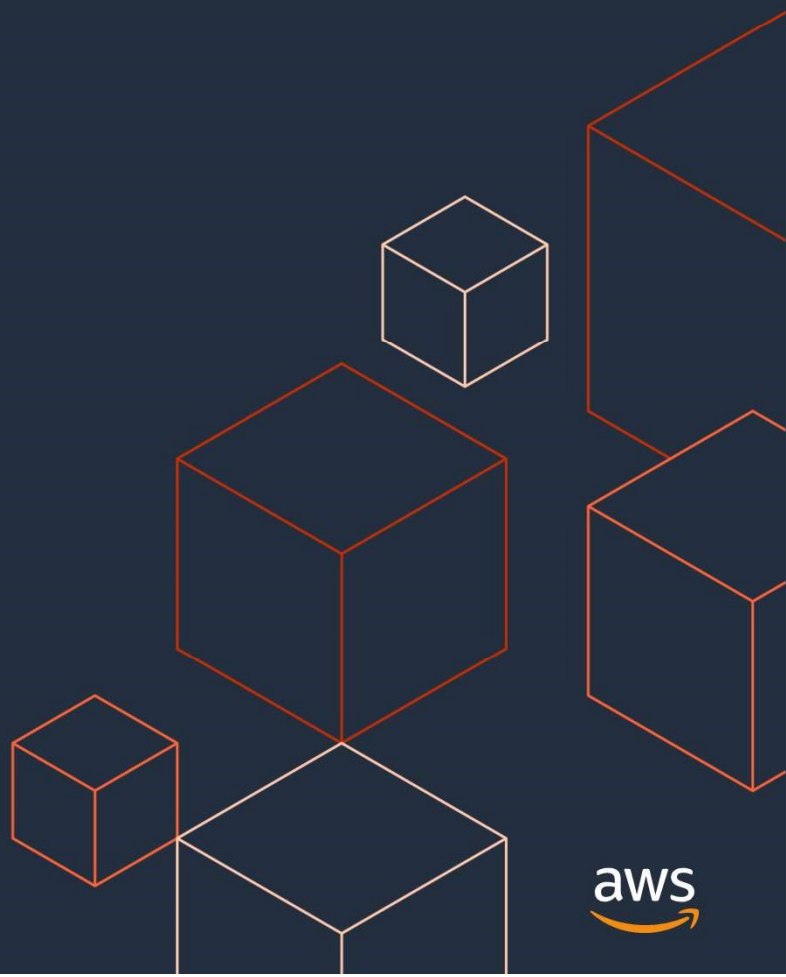
End Of Day 1

Q&A



Thank you!

Tomorrow:

- Tie things together
- Introduction to Automation
- Build an end to end environment

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