CodeBuild

If you are studying for AWS Developer Associate Exam, this guide will help you with quick revision before the exam. it can use as study notes for your preparation.

Dashboard   Other Certification Notes

CodeBuild

- Fully managed build service
- Alternative to other build tools such as Jenkins
- Continuous scaling (no servers to manage or provision – no build queue)
- Pay for usage: the time it takes to complete the builds
- Leverages Docker under the hood for reproducible builds
- Possibility to extend capabilities leveraging our own base Docker images
- Secure: Integration with KMS for encryption of build artifacts, IAM for build permissions, and VPC for network security, CloudTrail for API calls logging

Overview

- Source Code from GitHub / CodeCommit / CodePipeline / S3…
- Build instructions can be defined in code
  - buildspec.yml file
- Output logs to Amazon S3 & AWS CloudWatch Logs
- Metrics to monitor CodeBuild statistics
- Use CloudWatch Events to detect failed builds and trigger notifications - Use CloudWatch Alarms to notify if you need "thresholds" for failures
- CloudWatch Events / AWS Lambda as a Glue
- SNS notifications
- Ability to reproduce CodeBuild locally to troubleshoot in case of errors
- Pipelines can be defined within CodePipeline or CodeBuild itself
- Supported Environments
  - Java
  - Ruby
  - Python
  - Go
  - Node.js
  - Android
  - .NET Core
  - PHP
  - Docker: extend any environment we like

How does CodeBuild work?

- Two ways to run CodeBuild
  - Source Code
    - buildspec.yml
  - By building a Docker image
    - AWS Managed or Custom
- A CodeBuild Container is created
- We can add an optional S3 Cache bucket
  - Cache while We do multiple builds
    - dependencies
    - artifacts
- Output to an S3 bucket
- Save logs using CloudWatch or S3

CodeBuild BuildSpec

- buildspec.yml file must be at the root of your code
- Define environment variables:
  - Plaintext variables
  - Secure secrets: use SSM Parameter store

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- Phases (specify commands to run):
  - Install: install dependencies we may need for your build
  - Pre build: final commands to execute before build
  - Build: actual build commands
  - Post build: finishing touches (zip output for example)
- Artifacts: What to upload to S3 (encrypted with KMS)
- Cache: Files to cache (usually dependencies) to S3 for future build speedup

CodeBuild Local Build

- In case of need of deep troubleshooting beyond logs…
- You can run CodeBuild locally on your desktop (after installing Docker) - For this, leverage the CodeBuild Agent
- https://docs.aws.amazon.com/codebuild/latest/userguide/use-codebuild-agent.html

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