

## Note

The exercises in this course will have an associated charge in your AWS account. In this exercise, you will create the following resources:

- AWS CodeBuild build project

**The final exercise includes instructions to delete all the resources that you create in the exercises.**

Familiarize yourself with [AWS CodeBuild pricing](#) and the [AWS Free Tier](#).

# Exercise: Using AWS CodeBuild

In this exercise, you will be updating the application with a buildspec file, and using CodeBuild to test the application. The buildspec file contains the same tests you performed with the local build: linting with pylint, and unit tests with pytest. You will also use CodeBuild to run unit tests against the application, and then view the log output.

## Task 1: Creating a buildspec file

In this task, you create a *buildspec* file, which CodeBuild uses to run a build. You will then check these changes into your repository.

1. If needed, return to AWS Cloud9 and open your development environment.
2. In the **Environment** pane, create a file by right-clicking the **trivia-app** folder and choosing **New File**.
3. Rename the new file to `buildspecs/unittests.yaml`. In the **Confirm move to a new folder** window, choose **Yes**.
4. Open the new file and in the new file, copy and paste the following code:

```
version: 0.2

phases:
  install:
    commands:
      - pip3 install -U -r back-end-python/gameactions/requirements.txt
      - pip3 install -U -r back-end-python/tests/requirements.txt

  build:
    commands:
      - pylint --fail-under=8 back-end-python/gameactions/app.py
      - pytest back-end-python/tests/unit --junit-xml=unittests.xml --cov-report=xml
```

```
reports:
  UnitTests:
    files:
      - 'unittests.xml'
  NewCoverage: #
    files:
      - 'coverage.xml'
    file-format: COBERTURAXML
```

5. Save the file.
6. Add the file to your AWS CodeCommit repository.

```
git add *
git commit -m "adding a unittests buildspec"
git push origin main
```

## Task 2: Running the unit tests in CodeBuild

In this task, you use CodeBuild to run tests and the console to view the log output.

1. At the top left, choose the **AWS Cloud9** icon and choose **Go to your Dashboard**.
2. Search for and choose **CodeCommit**.
3. In the AWS CodeCommit navigation pane, choose **Repositories**.
4. In the **Repositories** pane, open the **trivia-app** repository.
5. View the commit that was pushed from **AWS Cloud9** by going to the navigation pane and choosing **Commits**.
6. In the navigation pane, expand **Build** and then choose **Build projects**.
7. Choose **Create build project** and configure the following settings.
  - **Project name:** trivia-unittests
  - **Repository:** trivia-app
  - **Branch:** main
  - **Operating system:** Ubuntu
  - **Runtime(s):** Standard
  - **Image:** aws/codebuild/standard:5.0
  - **Build specifications:** Keep *Use a buildspec file* selected
  - **Buildspec name - optional:** buildspecs/unittests.yaml
8. Choose **Create build project**.
9. Choose **Start build**.
10. To see the build output, choose **Tail logs**.
11. When the build shows as *Succeeded*, close the log window by choosing **Close** (at the bottom right of the window).
12. Choose the **Reports** tab.

13. View the *Pass rate* by selecting the **Test** report, or the *Line coverage* and *Branch coverage* by selecting the **Code coverage** report.

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