National College of Ireland

Configuration Manual

MSc Research Project
M.Sc. Cloud Computing

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Project Submission Sheet
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Configuration Manual

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1 Introduction

This document will consist of all the steps and procedure which were performed to execute the research implementation, and could be used to reproduce the environment and the results.

2 Setup on AWS Cloud

First navigate to **aws.amazon.com** and login with your credentials to create and configure all the resource on AWS Cloud.

2.1 AWS Cloud9 Configuration

The following steps will be performed to configure AWS cloud 9 :

- Search for Cloud9 in the search bar of AWS Management Console and click on Create New Environment and then give the name and select 'New EC2 instance' as shown in Figure 1.

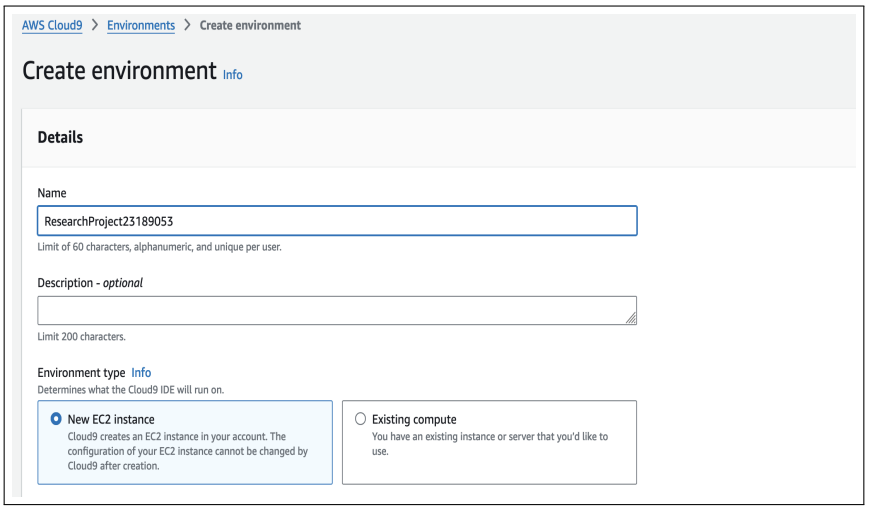

Figure 1: Cloud 9 Configuration

- Then configure the EC2 settings as shown below in Figure 2 and choose Secure Shell as the connection method in the Network Settings.

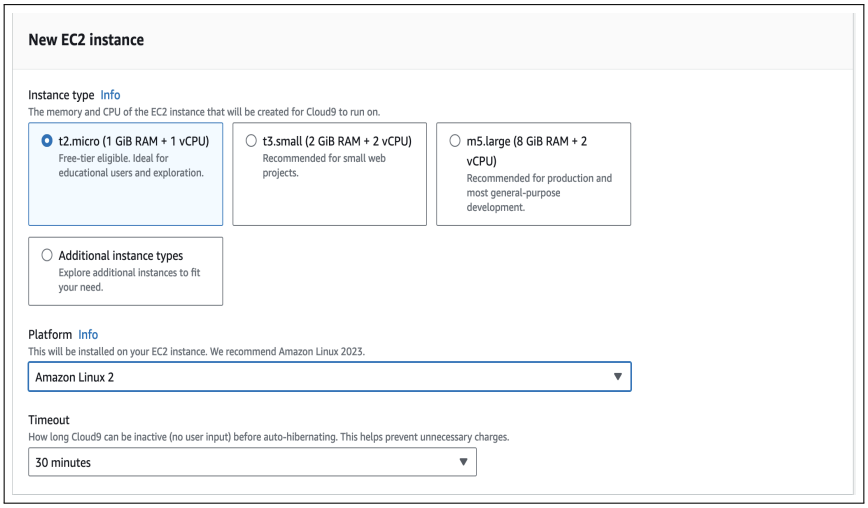

Figure 2: Cloud 9 EC2 Configuration

- Once the environment is created we will connect our Git repository in the environment with the following commands which will also trigger the Code Pipeline -
  - git init
  - git remote add origin "GitHub Repo URL"
  - git add .
  - git commit -m "commit message"
  - git push origin "branch-name"

2.2 AWS Code Pipeline

Search for AWS Code Pipeline in the AWS Management Console and click on Create New Pipeline and perform the below steps

- In Create Options choose 'Create Custom Pipeline'
- Now in the Pipeline settings select the settings as shown below in Figure 3.
- Now to Add the Source Stage in the Pipeline we need to authenticate with our GitHub account and choose the repo configured in AWS Cloud 9 as shown in Figure 4. This will open a GitHub popup in the AWS Console for which pop ups should be enabled in the browser.

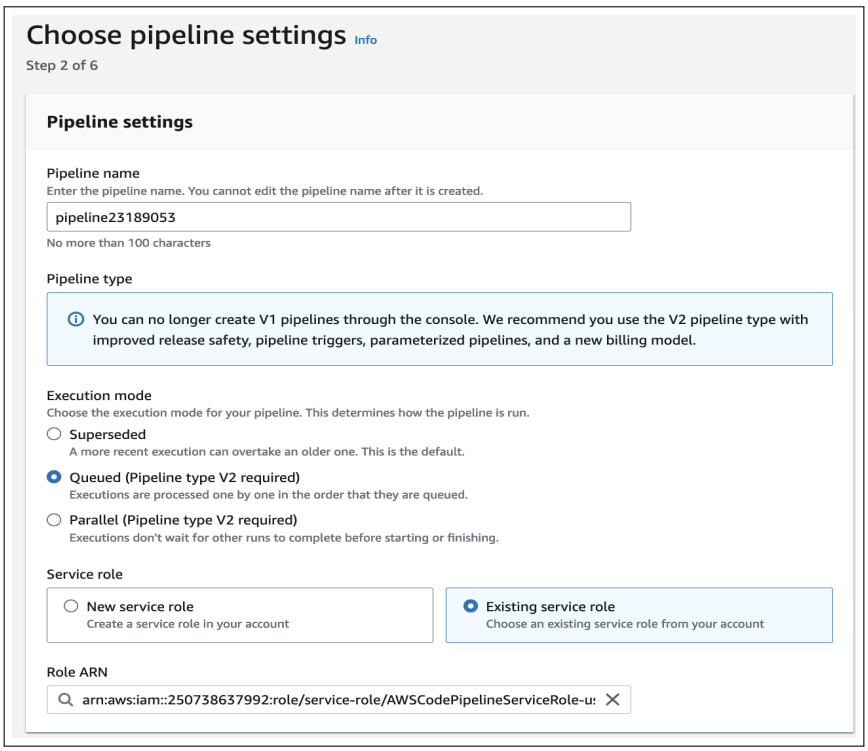

Figure 3: AWS Code Pipeline Configuration 1

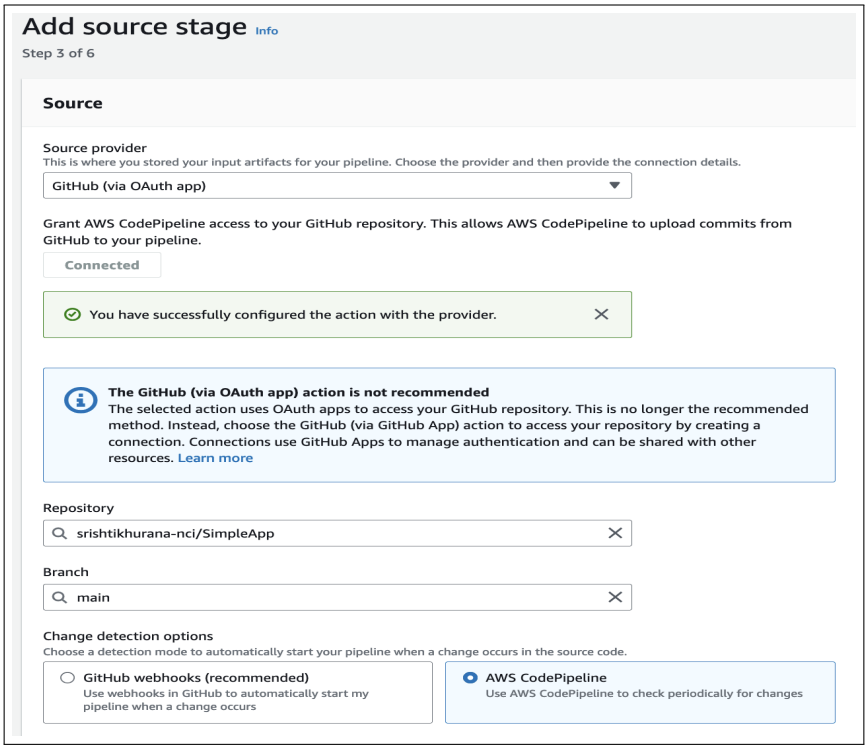

Figure 4: Adding Source in Code Pipeline

- Now to Add the Build Stage in the Pipeline we need to create a new Code Build Project and configure it as shown in Figure 5.

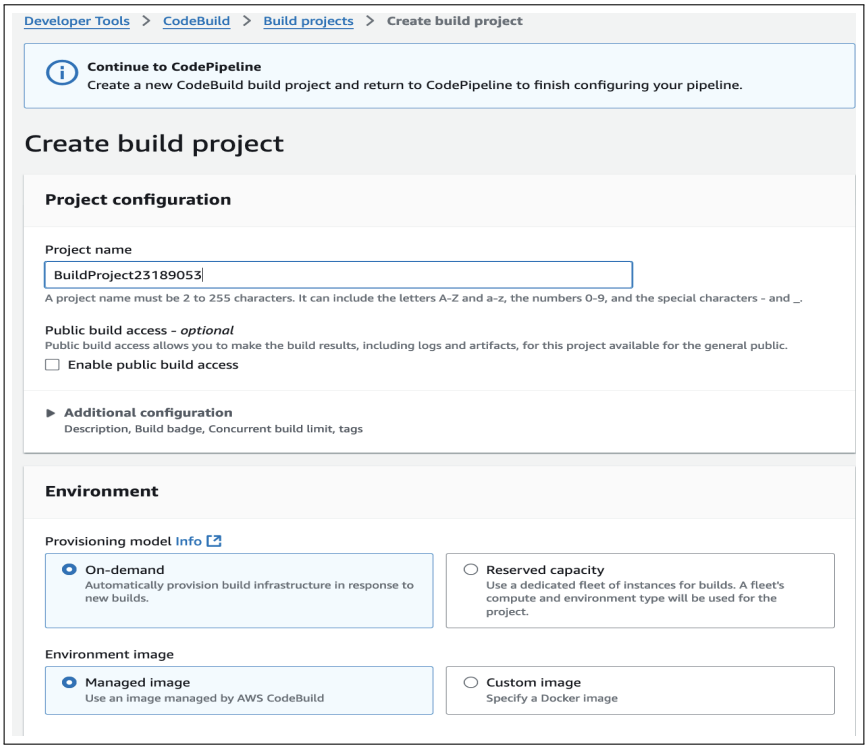

Figure 5: Code Build Project

- Then Configure the build environment as shown below in Figure 6.
- Also configure the service role along with the custom buildspec file name for the build stage as shown in Figure 7.
- And finally enable the CloudWatch Logs as well for the Build Project.
- Once the Build project is configured, just select the name of the Build Project after choosing AWS Code Build as the provider.
- Also Select Build Type as Single Build and Artifacts from Source Stage.

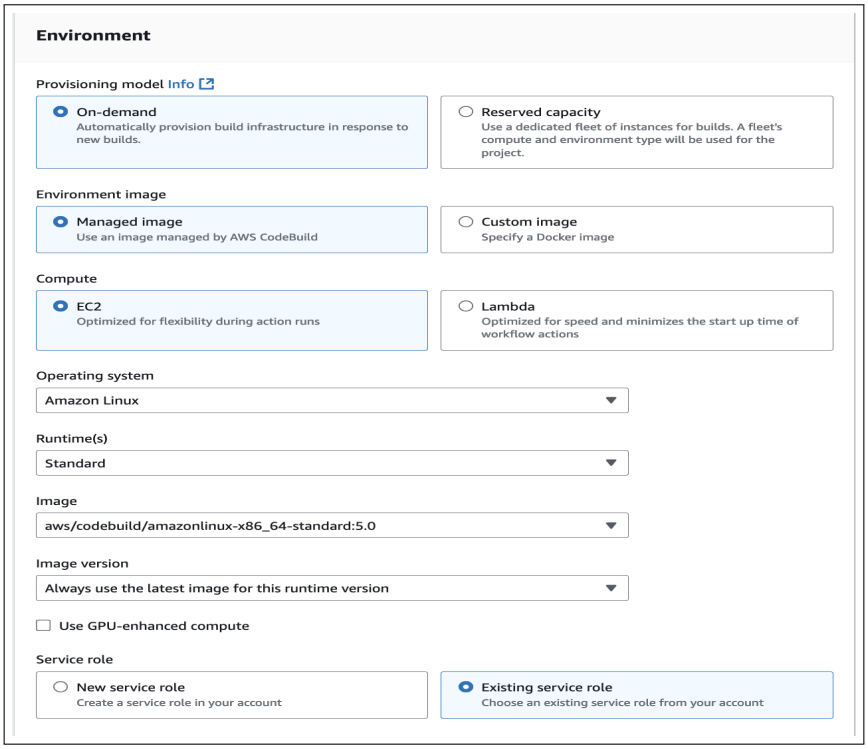

Figure 6: Code Build Environment

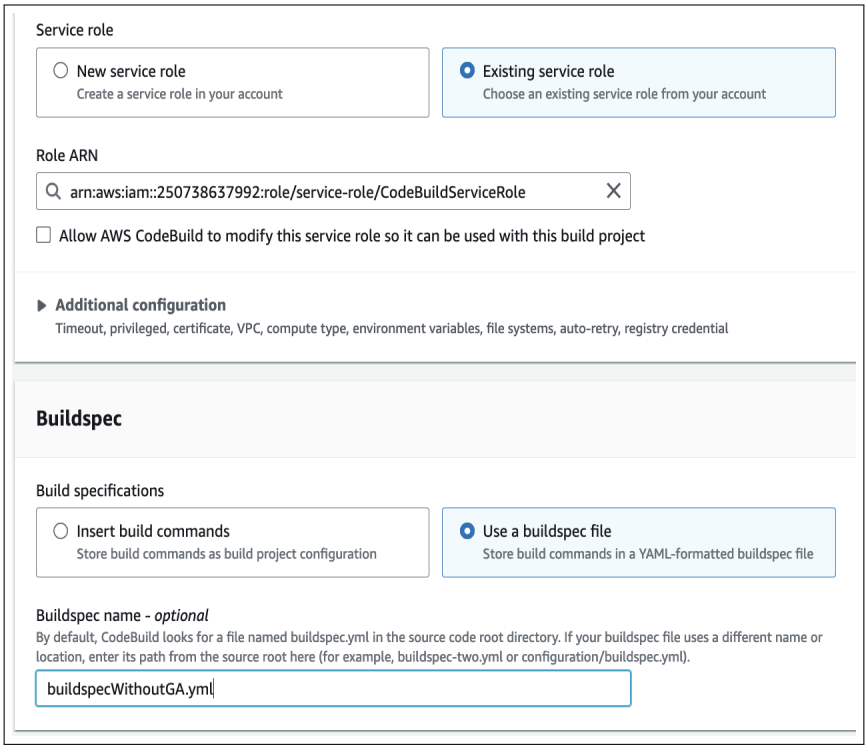

Figure 7: Code Build Service Role and Buildspec

- After that configure the deploy stage as shown in Figure 8.

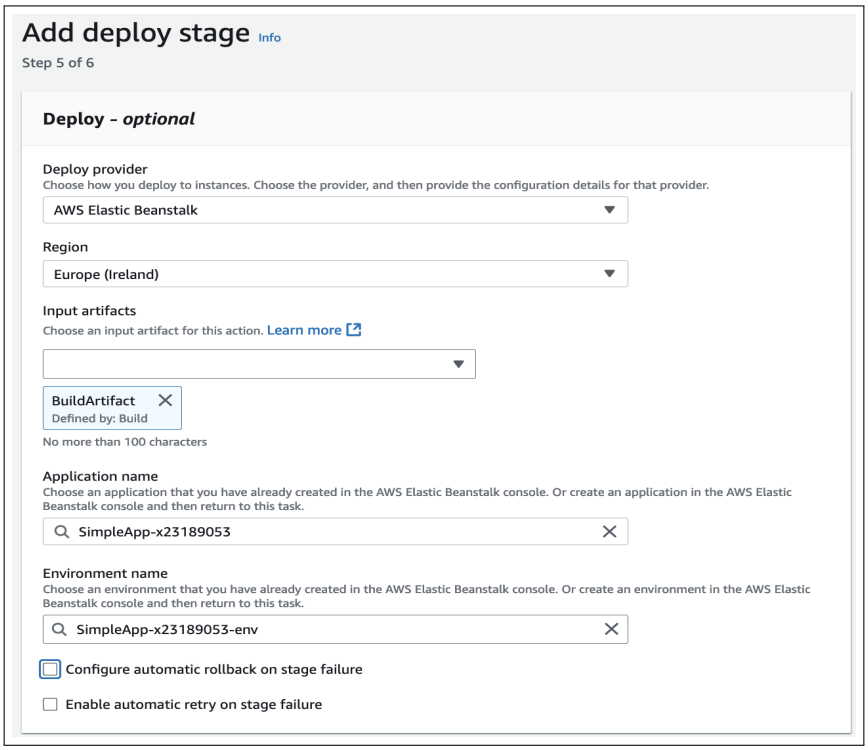

Figure 8: Configuration of Deploy Stage

2.3 AWS Lambda

Navigate to AWS Management Console Search and search for Lambda and click on create new Lambda Function. The configure the Lambda as shown below in Figure 9.

- Configure the name
- Choose Python 3.13 as the Runtime
- Choose the neccessary service role
- Create Function

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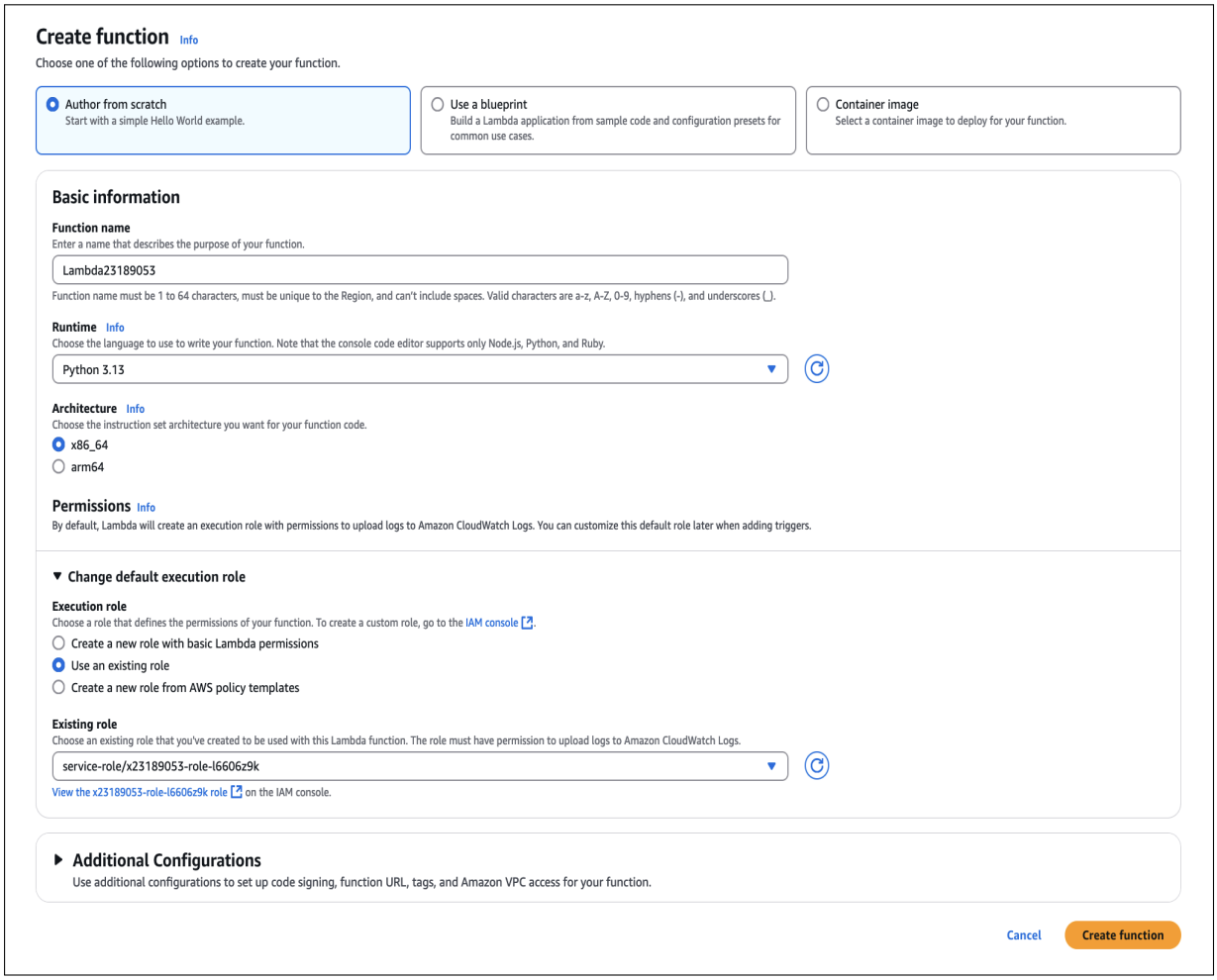

Figure 9: AWS Lambda Function Configuration