# Improve Code Efficiency with AWS CodeGuru

Amazon CodeGuru

- Amazon CodeGuru is a developer tool powered by machine learning that provides intelligent recommendations for improving code quality and identifying an application's most expensive lines of code.
- It has two components
  - Amazon CodeGuru Reviewer
  - Amazon CodeGuru Profiler
- Amazon CodeGuru Reviewer uses machine learning to identify critical issues and hard to find bugs during application development phase to improve code quality.
- On the other hand, Amazon CodeGuru Profiler optimize the performance for application running in production and identifies the most expensive lines of code, it helps you by reducing operational costs at a very significant rate.
- It is readily available in console to get started
- It is available in selected regions. You can check here.
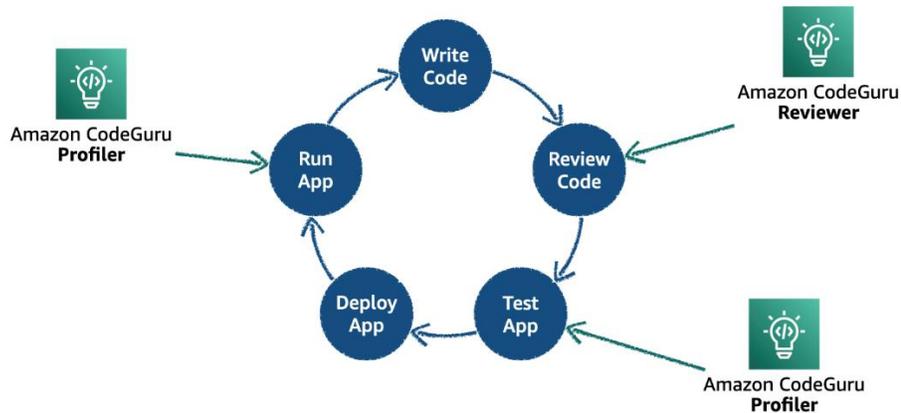
Steps

- Log in to console and search for CodeGuru in search bar

- It will take you to dashboard, if you haven't accessed before than it will show features and highlights of the service.

- In the navigation pane on the left, choose Profiler, and then choose Profiling groups.

- On the Profiling groups page, choose Create profiling group.

- Provide a Name for the new profiling group. Choose the compute platform that your applications are running on. If your applications run on AWS Lambda, choose the AWS Lambda option. Choose Other if your applications run on a compute platform other than AWS Lambda, such as Amazon EC2, on-premises servers, or a different platform.

- Choose Create profiling group.

- Start by choosing **Give access to users and roles**. Choose the IAM users or roles that can submit profiling data and configure the agent.

- If your applications run on AWS Lambda, choose the role that your AWS Lambda function uses.

- After you grant permissions for a user or role, you don't need to attach IAM policies for agent permissions.
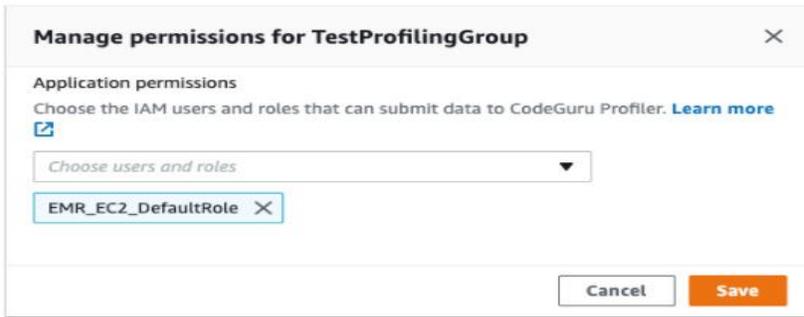
Use IAM:ListUsers and IAM:ListRoles permissions to see your users and roles. Otherwise, you can add a user or Amazon Resource Name (ARN) role. You'll see the following message.
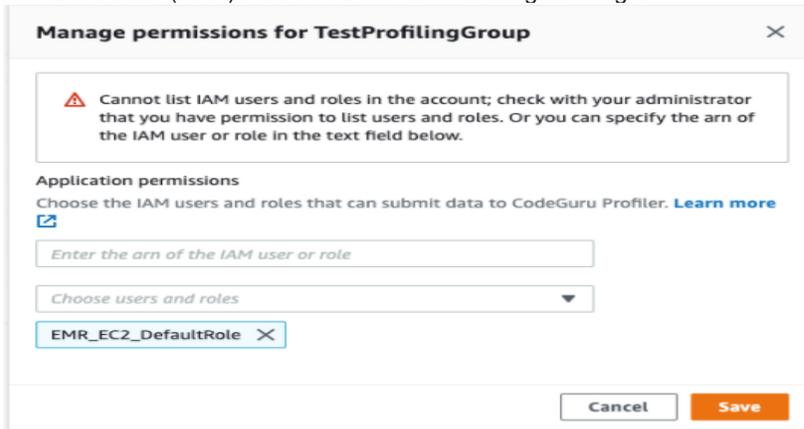
Or you can modify the code like this

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "codeguru-profiler:ConfigureAgent",
                "codeguru-profiler:PostAgentProfile"
            ],
            "Resource": "arn:aws:codeguru-profiler:<region>:<account
        }
    ]
}
```

Run your application with the profiling agent

- Run your application with the CodeGuru Profiler profiling agent.
- You can either start the agent as a Java virtual machine(JVM) agent, or manually with a code change in your application.
- To start profiling your application.

Author: Giten Mitra, Cloud Solution Architect – MIND
Date: 06/01/2021