Experiment 4

Aim:-To study AWS code pipeline and deploy web application using code pipeline

Theory:-

AWS CodePipeline is a fully managed continuous delivery service that helps automate the release pipelines for fast and reliable application and infrastructure updates. It allows you to model, visualize, and automate the steps required to release your software. Here are some key points about AWS CodePipeline:

Automation of Software Release Process: AWS CodePipeline automates the build, test, and deployment phases of your release process every time there is a code change, based on the release model you define.

Integration with Different Services: It integrates with a variety of third-party services and AWS services such as AWS CodeBuild, AWS CodeDeploy, and AWS CloudFormation, enabling you to have a fully automated release process for your applications.

Customizable Pipeline: CodePipeline allows you to build custom release workflows with multiple stages and actions. Each stage can have one or more actions, and you can define the actions to be performed at each stage, such as source code versioning, building, testing, and deployment.

Visual Workflow: It provides a visual representation of your release process, allowing you to see the stages and actions in the pipeline and monitor the progress of each release.

Integration with Third-Party Tools: It supports integration with a wide range of third-party tools and services through its extensible architecture, enabling you to incorporate your favorite tools into the release process.

Flexibility and Control: CodePipeline provides flexibility and control over the release process, allowing you to define custom rules for the execution of each action and the transition between stages.

Security: It integrates with AWS Identity and Access Management (IAM) to control access to your pipelines, ensuring that only authorized users have the necessary permissions to view or modify the pipelines.

Monitoring and Logging: AWS CodePipeline provides monitoring and logging capabilities, allowing you to track the execution of each action and stage in the pipeline and quickly identify any issues or failures.

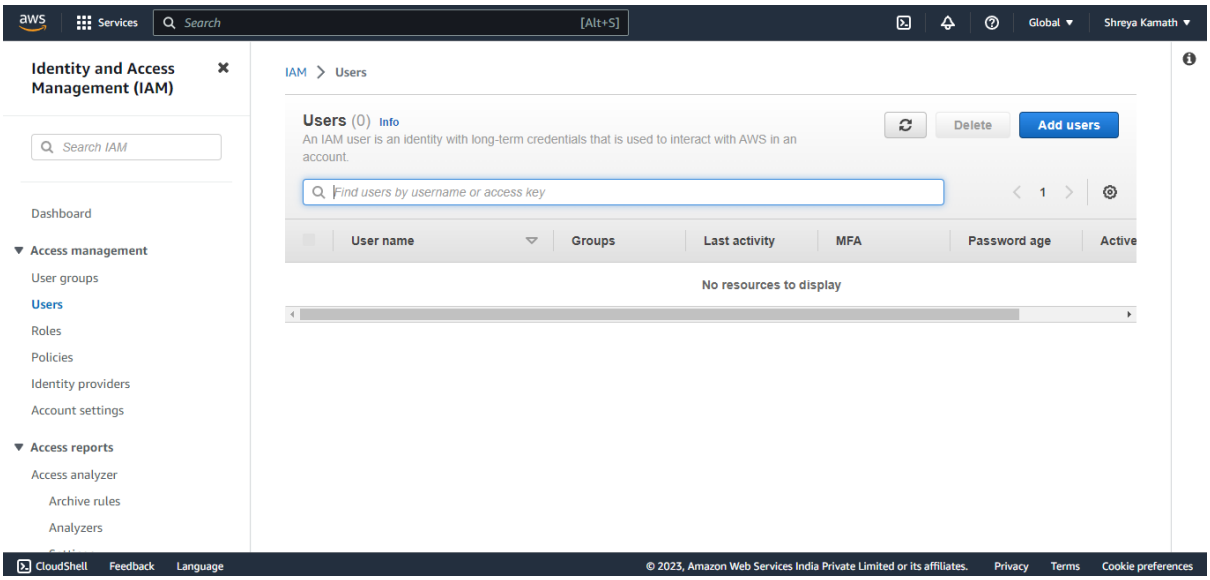
Scalability and Availability: As a fully managed service, AWS CodePipeline offers scalability and high availability, ensuring that your release pipelines can handle any workload and are always accessible.

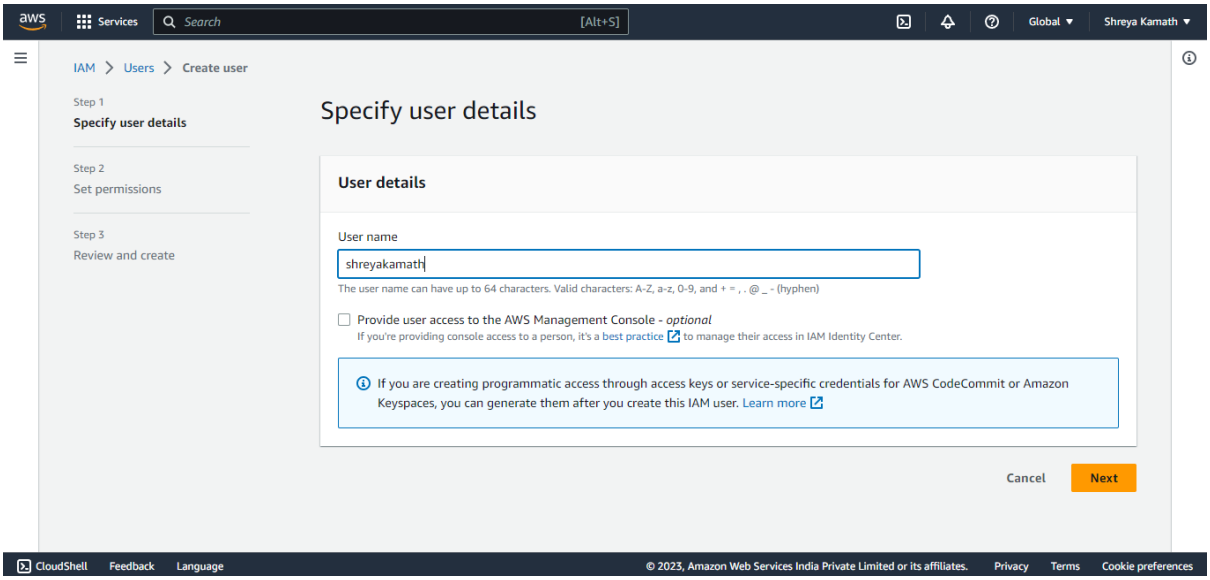
Cost-Effective: With a pay-as-you-go pricing model, AWS CodePipeline helps you optimize costs by charging only for the resources you use.

Steps :-

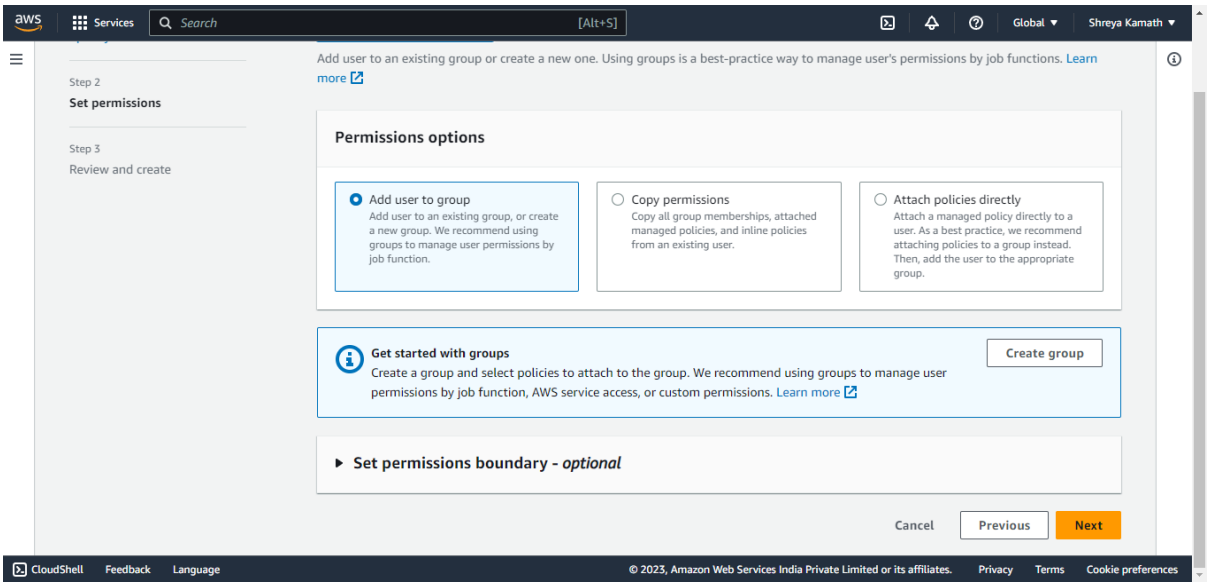
1) Login to AWS account and in search bar search IAM and click on it

2) Dashboard of IAM user open and then create a new user

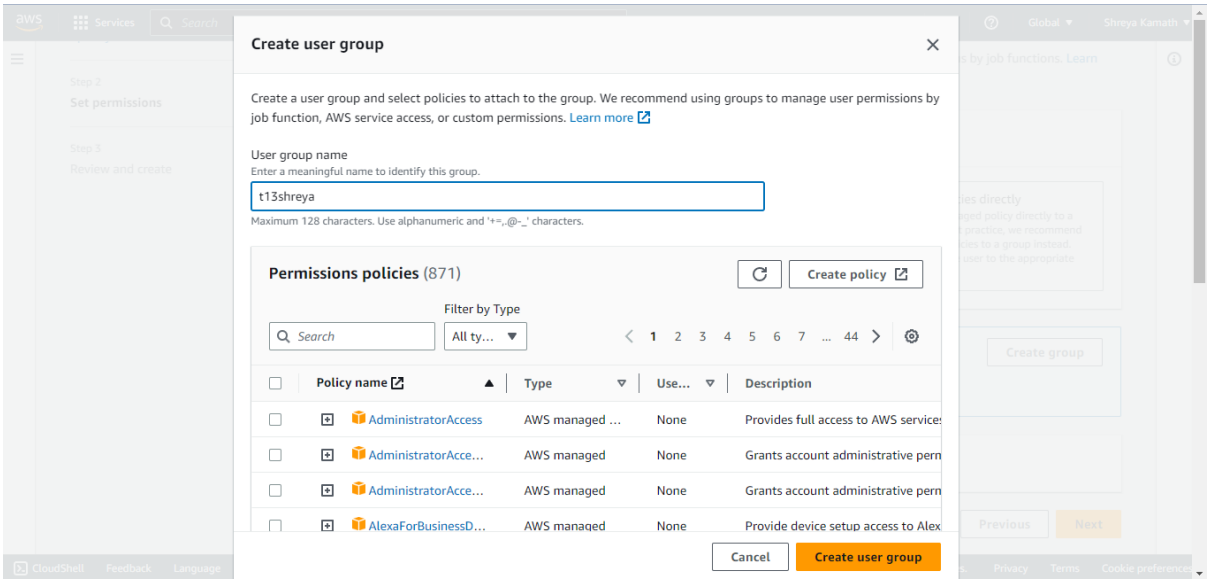


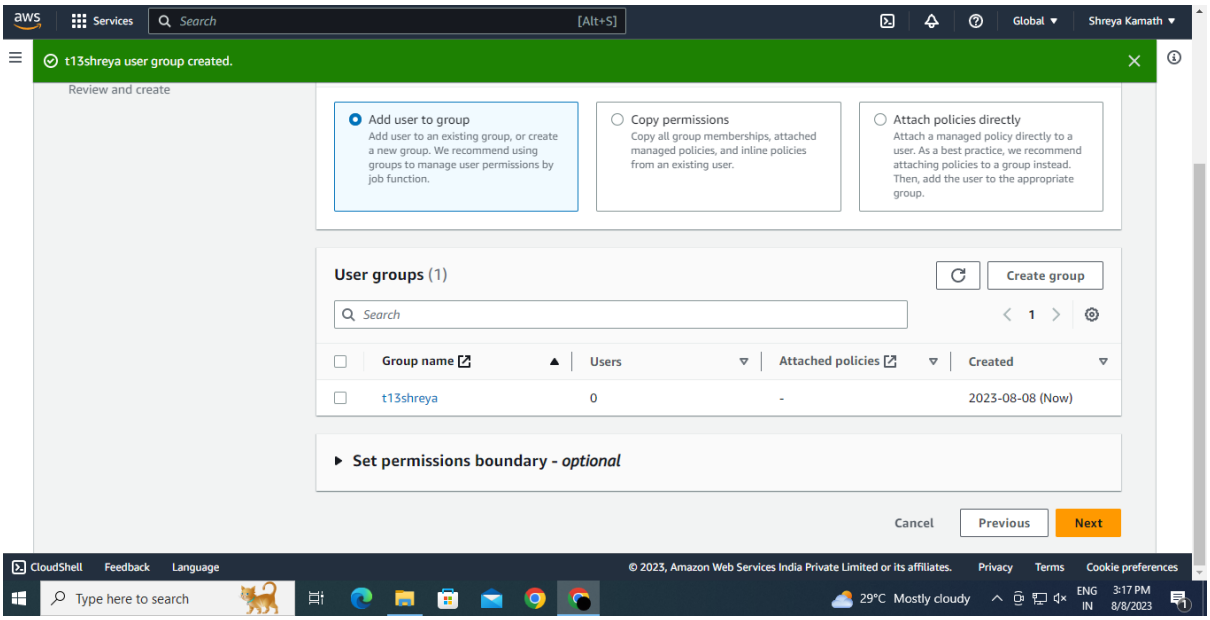


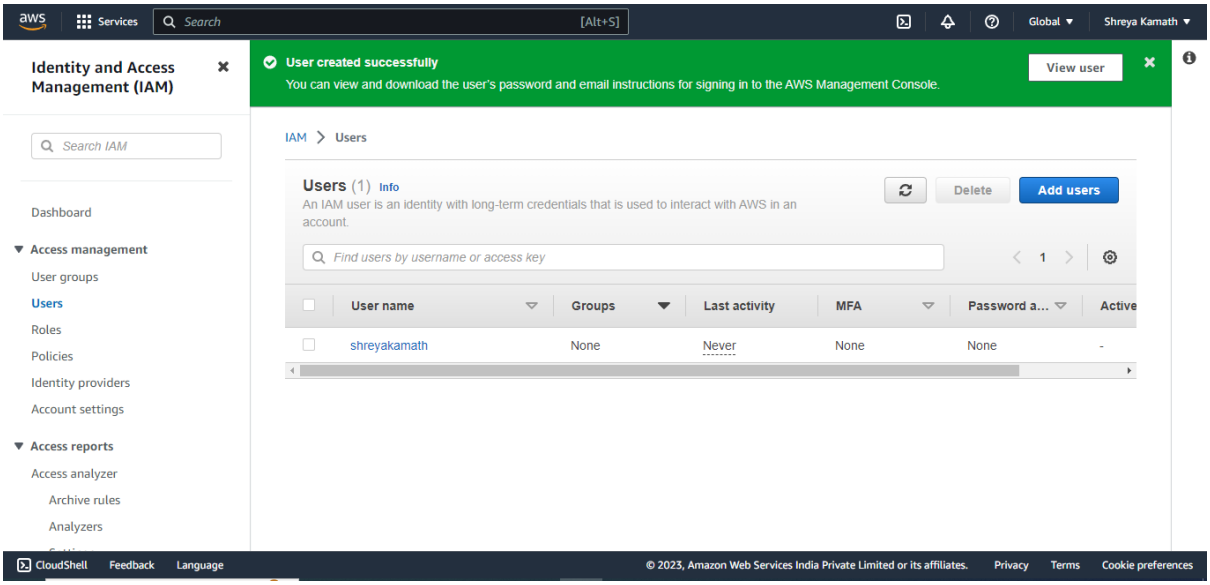
2) Set the permissions for the new user



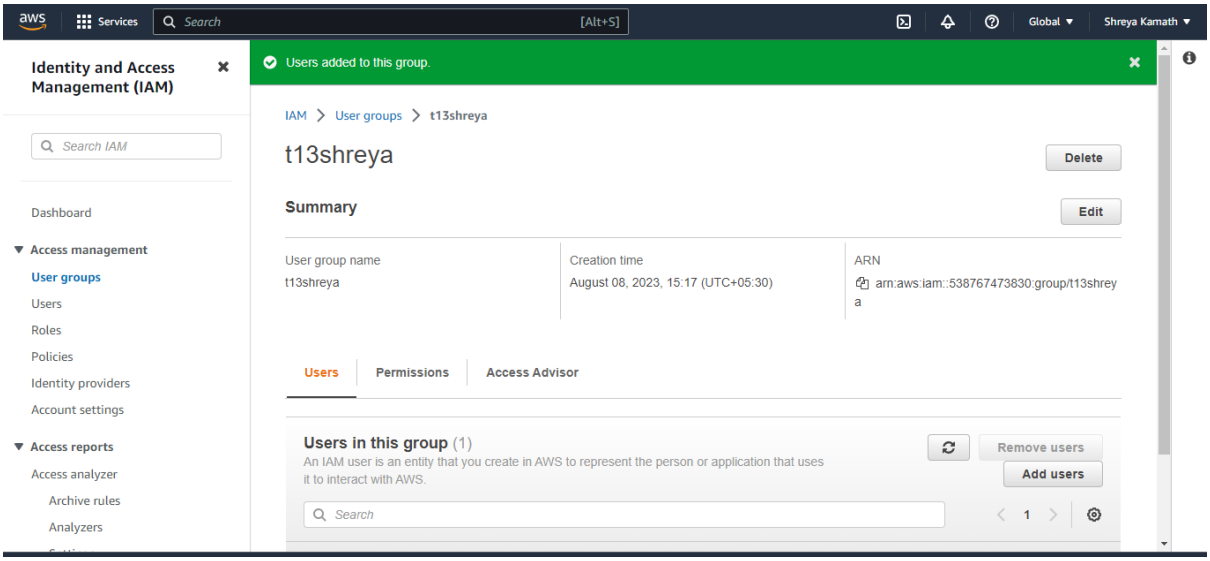
3)Create user and user name , usergroup will be visible on dashboard

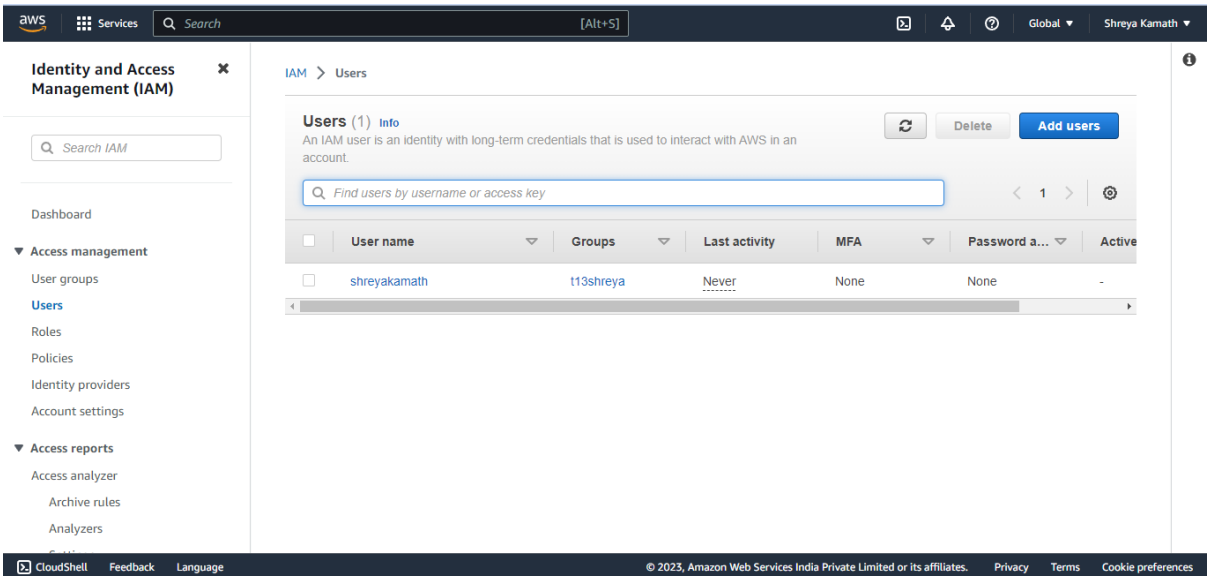

Create user group
Create a user group and select policies to attach to the group. We recommend using groups to manage user permissions by job function, AWS service access, or custom permissions. Learn more
User group name
Enter a meaningful name to identify this group.
t13shreya
Maximum 128 characters. Use alphanumeric and '+=,.@-_' characters.
Permissions policies (871)
Create policy
Filter by Type
Search
All ty...
Policy name
Type
Use...
Description
AdministratorAccess
AWS managed ...
None
Provides full access to AWS services
AdministratorAcce...
AWS managed
None
Grants account administrative perm
AdministratorAcce...
AWS managed
None
Grants account administrative perm
AlexaForBusinessD...
AWS managed
None
Provide device setup access to Alex
Cancel
Create user group

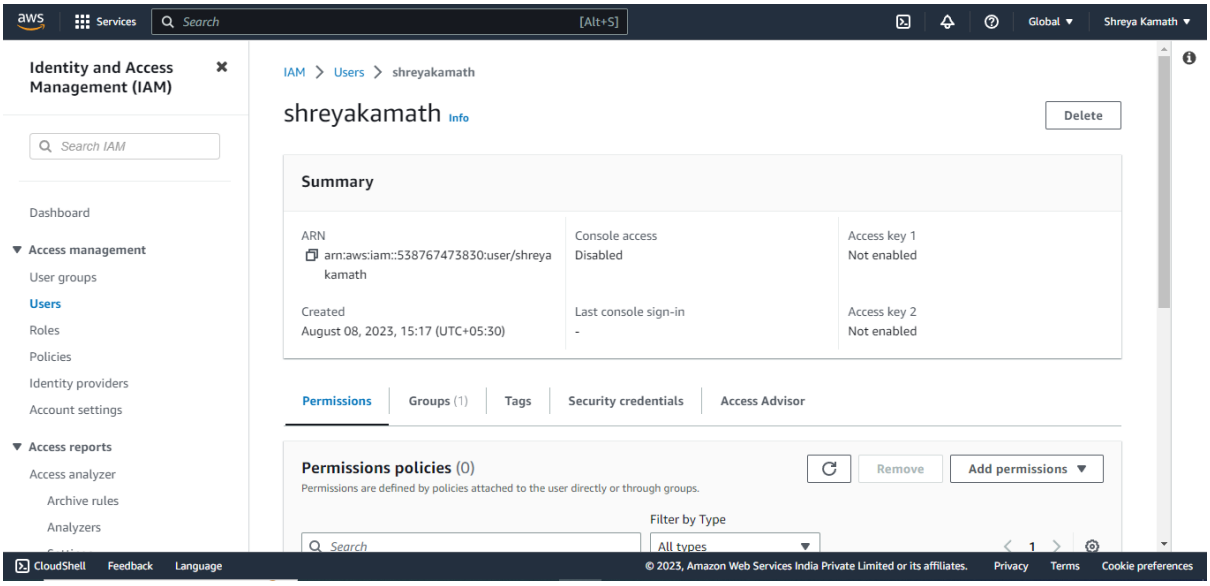

Services
Search
[Alt+S]
Global
Shreya Kamath
t13shreya user group created.
Review and create
Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.
Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.
Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.
User groups (1)
Create group
Search
Group name
Users
Attached policies
Created
t13shreya
0
-
2023-08-08 (Now)
Set permissions boundary - optional
Cancel
Previous
Next
CloudShell
Feedback
Language
© 2023, Amazon Web Services India Private Limited or its affiliates.
Privacy
Terms
Cookie preferences
Type here to search
29°C Mostly cloudy
ENG
IN
3:17 PM
8/8/2023



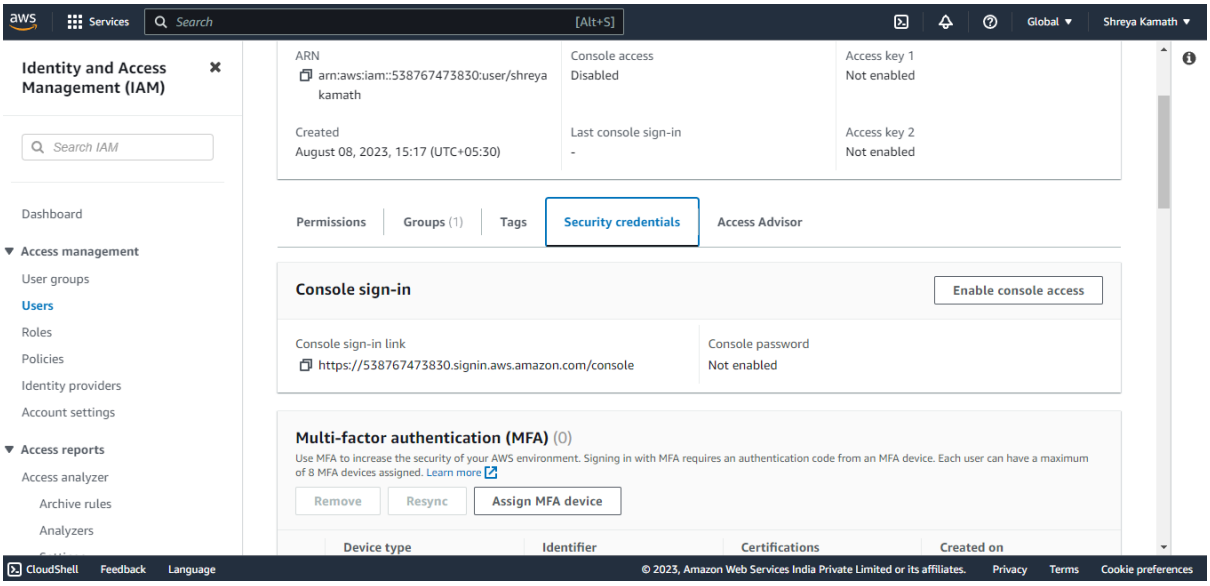
4)See the summary of created user and usergroup

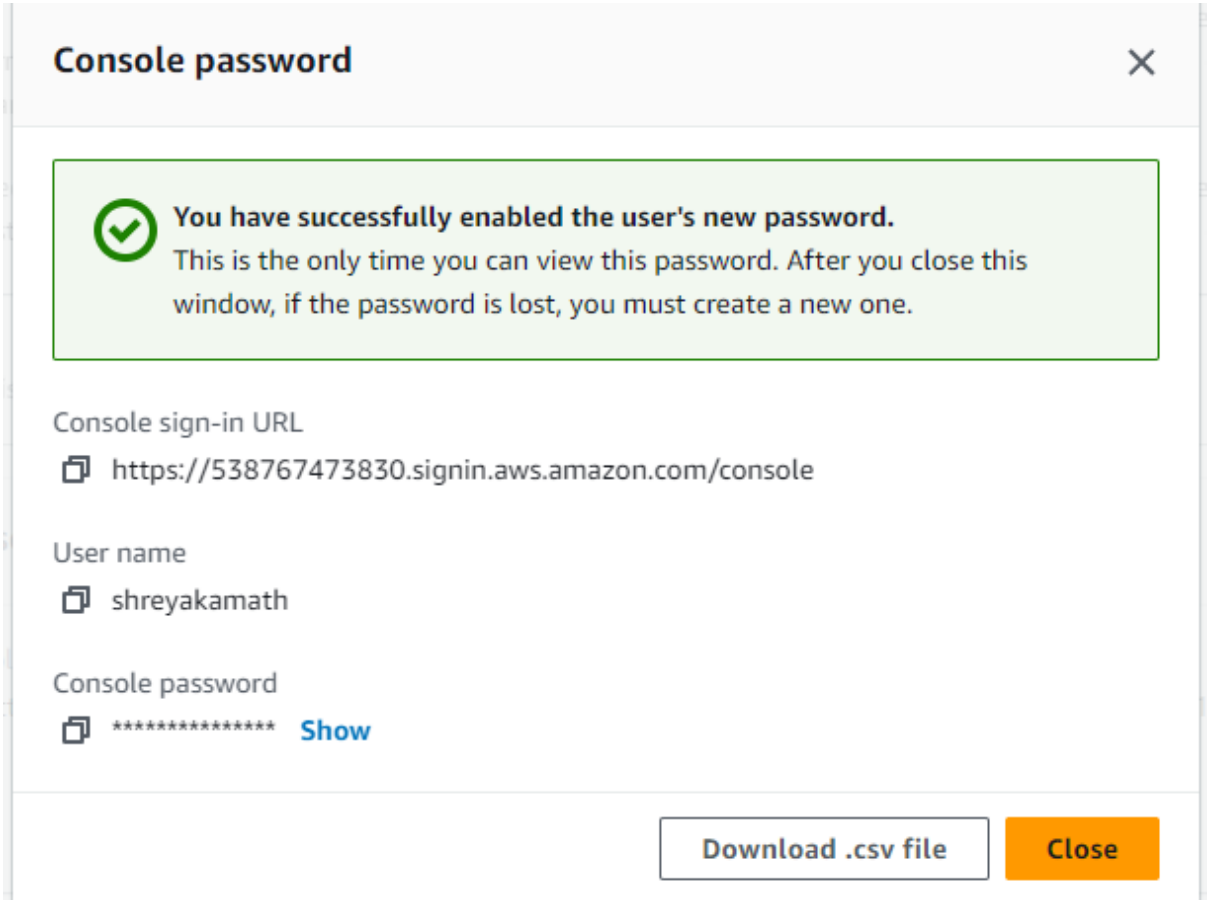




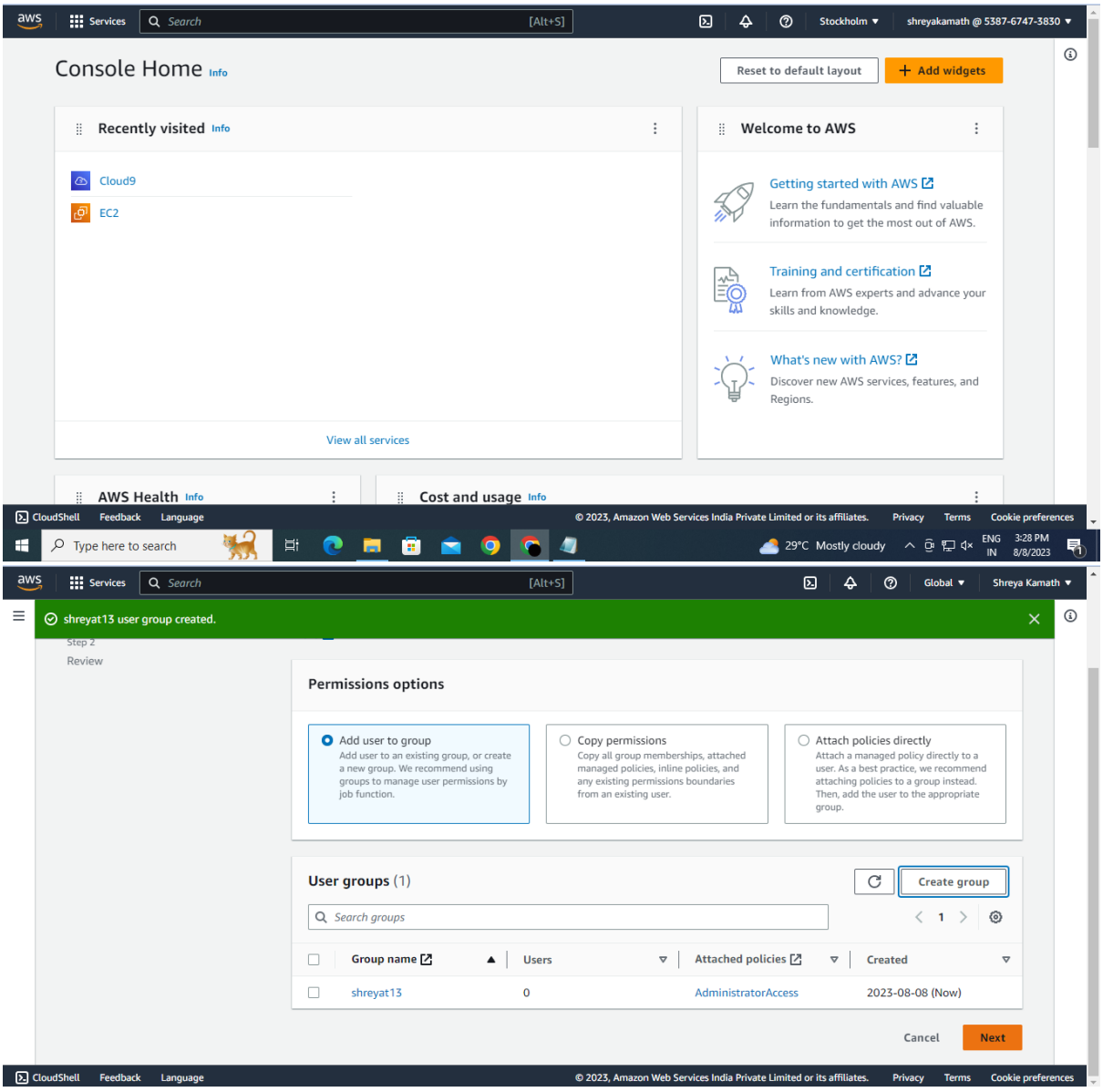


5)Go to security credentials tab and see for console password and other details , take screenshot of these details

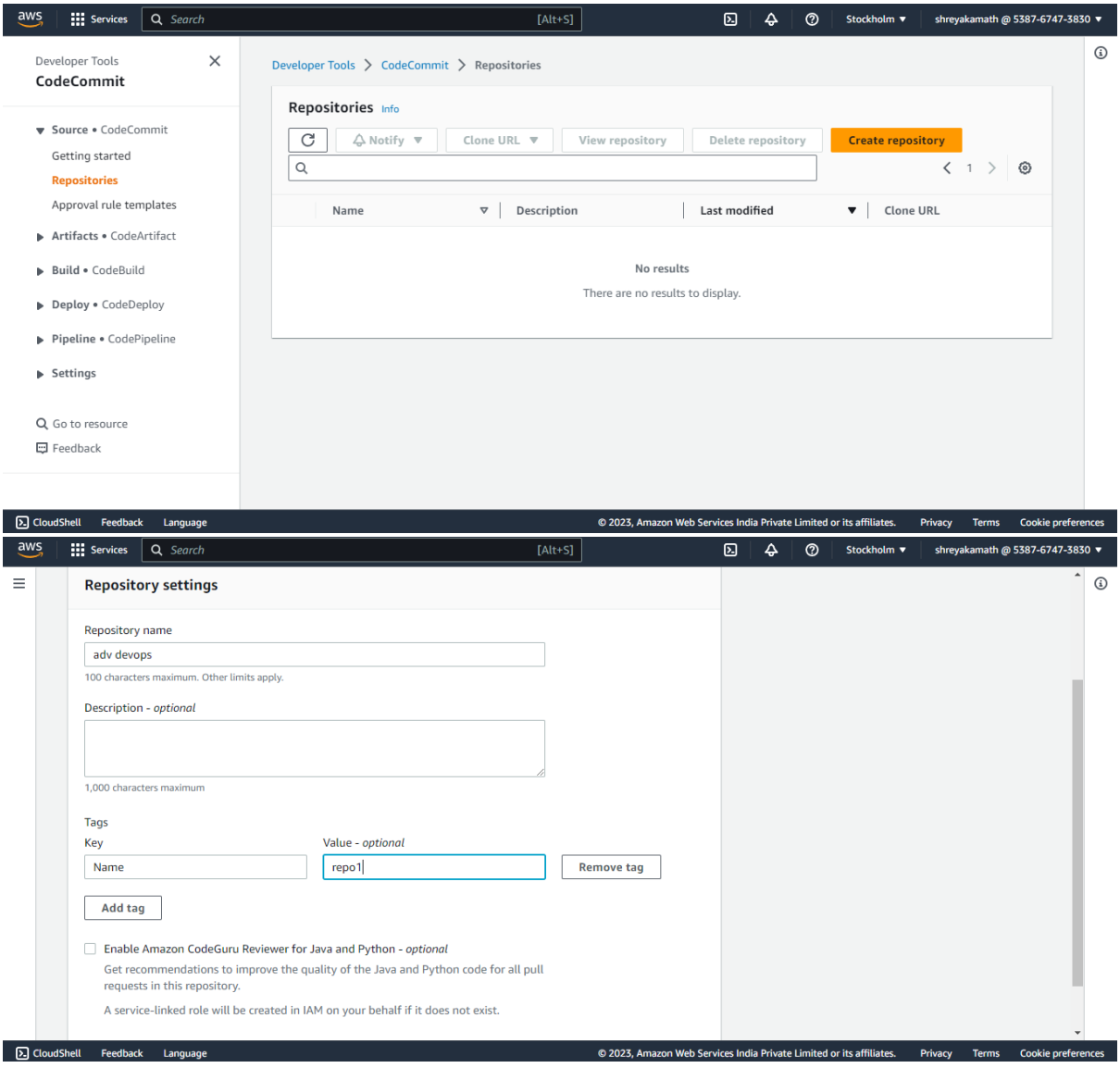




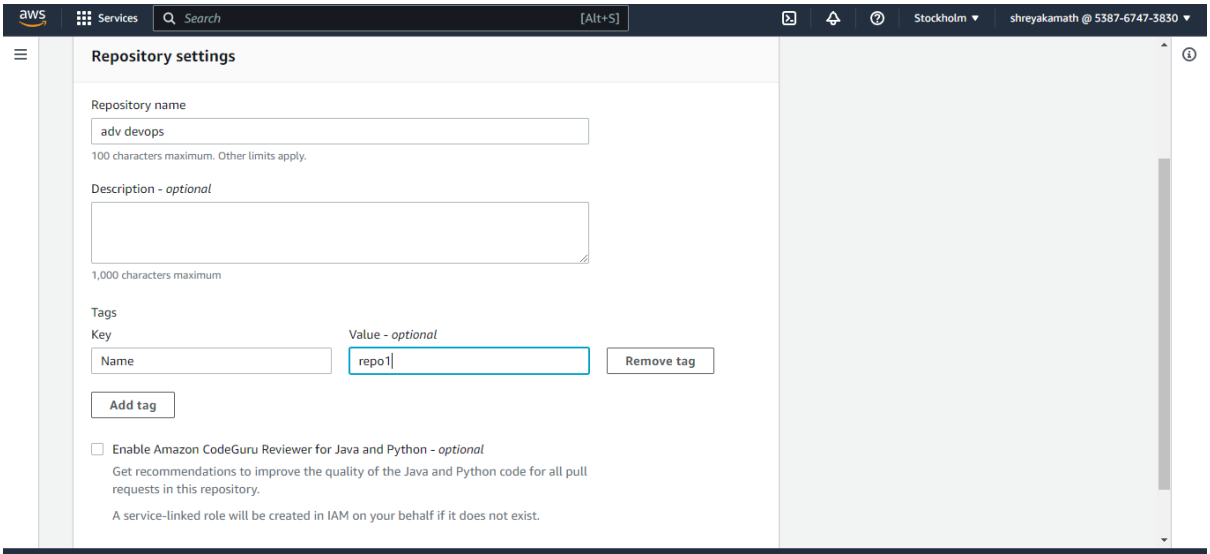
6)Go to dashboard and search codecommit in search bar



7) Go to repositories option and create a new repository , give a name to it



8) Go to code option in left sidebar and select https there


Services
Search
[Alt+S]
Stockholm
shreyakamath @ 5387-6747-3830
Repository settings
Repository name
adv devops
100 characters maximum. Other limits apply.
Description - optional
1,000 characters maximum
Tags
Key
Value - optional
Name
repo1
Remove tag
Add tag
Enable Amazon CodeGuru Reviewer for Java and Python - optional
Get recommendations to improve the quality of the Java and Python code for all pull requests in this repository.
A service-linked role will be created in IAM on your behalf if it does not exist.
CloudShell
Feedback
Language
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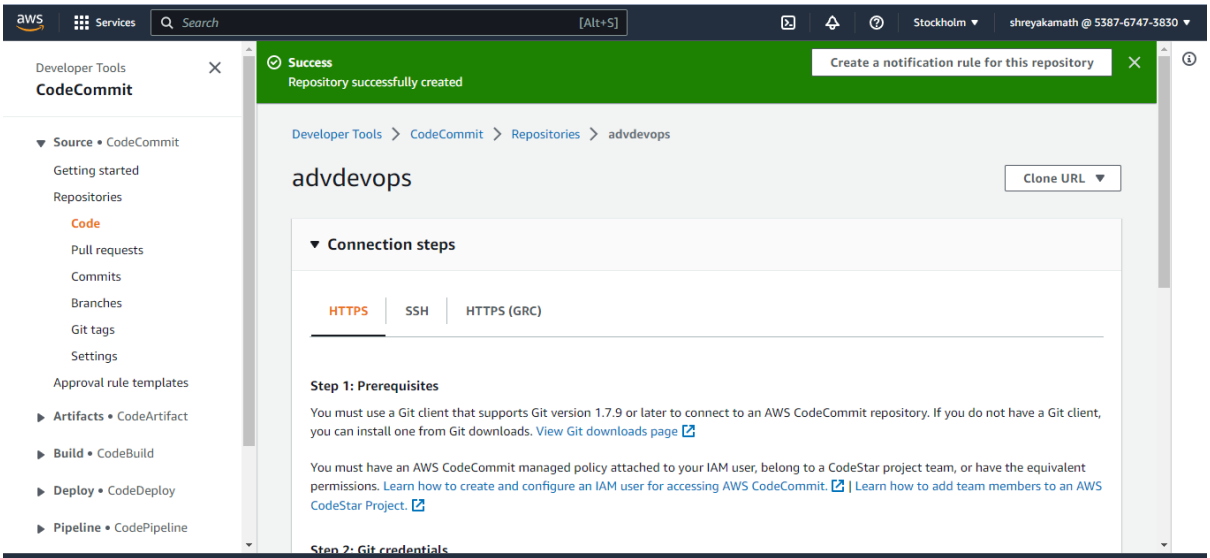
Services
Search
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Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Git tags
Settings
Approval rule templates
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Success
Repository successfully created
Create a notification rule for this repository
Developer Tools > CodeCommit > Repositories > advdevops
advdevops
Clone URL
Connection steps
HTTPS
SSH
HTTPS (GRC)
Step 1: Prerequisites
You must use a Git client that supports Git version 1.7.9 or later to connect to an AWS CodeCommit repository. If you do not have a Git client, you can install one from Git downloads. View Git downloads page
You must have an AWS CodeCommit managed policy attached to your IAM user, belong to a CodeStar project team, or have the equivalent permissions. Learn how to create and configure an IAM user for accessing AWS CodeCommit. | Learn how to add team members to an AWS CodeStar Project.
Step 2: Git credentials
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Feedback
Language
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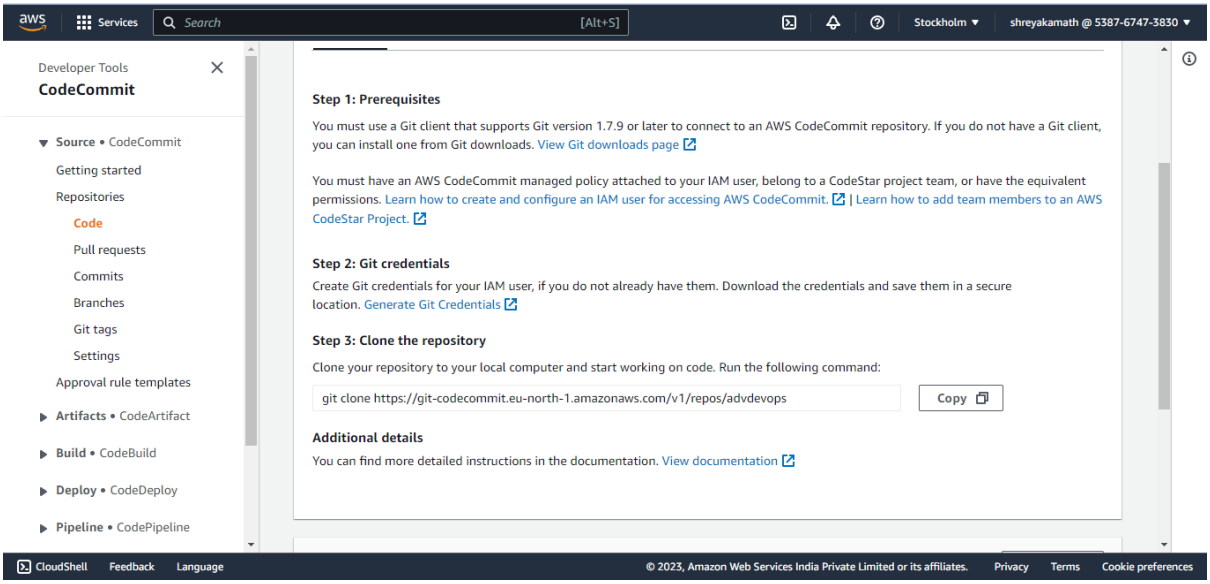
Services
Search
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Stockholm
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Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Git tags
Settings
Approval rule templates
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
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Step 2: Git credentials
Create Git credentials for your IAM user, if you do not already have them. Download the credentials and save them in a secure location. Generate Git Credentials
Step 3: Clone the repository
Clone your repository to your local computer and start working on code. Run the following command:
git clone https://git-codecommit.eu-north-1.amazonaws.com/v1/repos/advdevops
Copy
Additional details
You can find more detailed instructions in the documentation. View documentation
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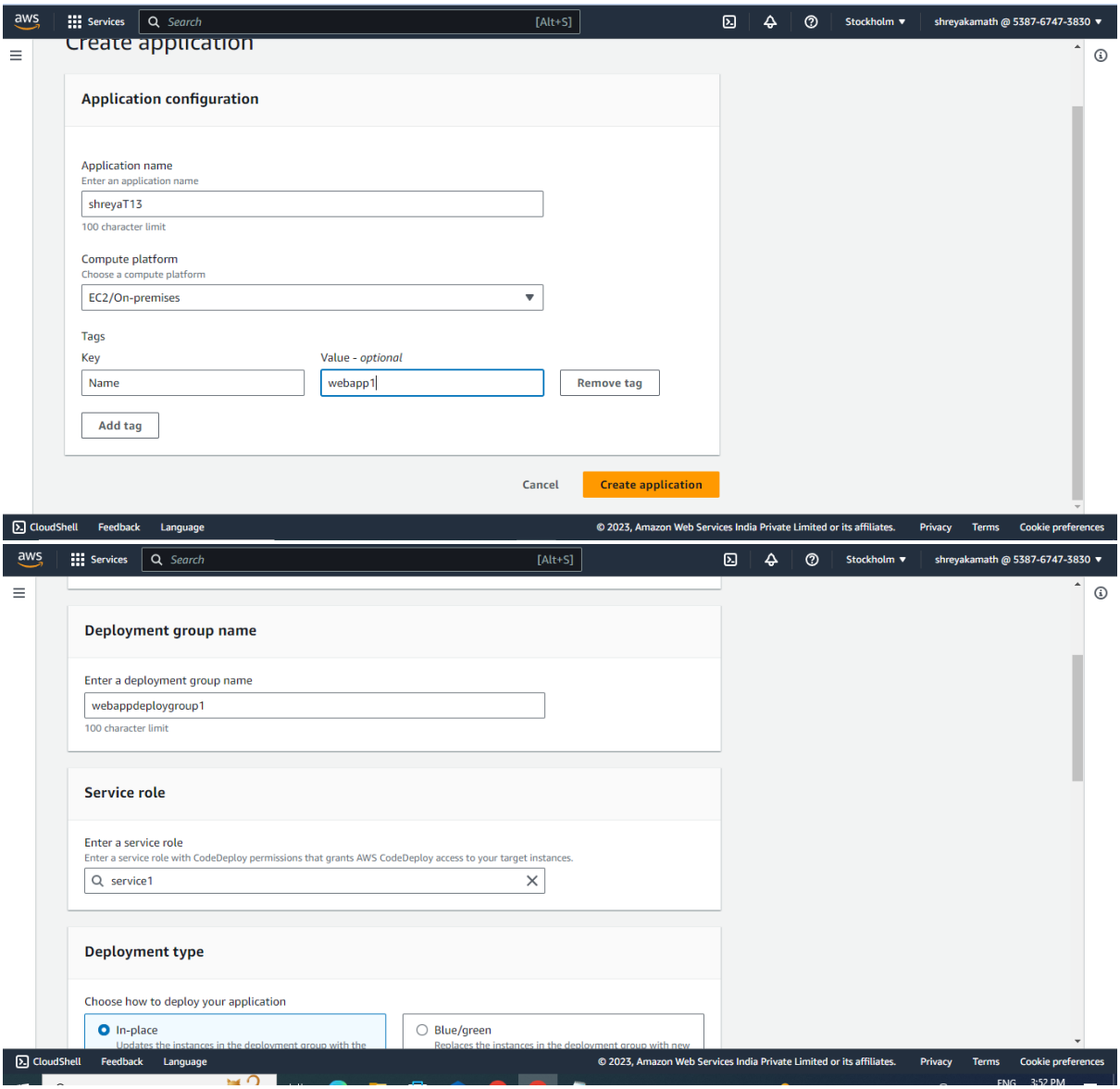
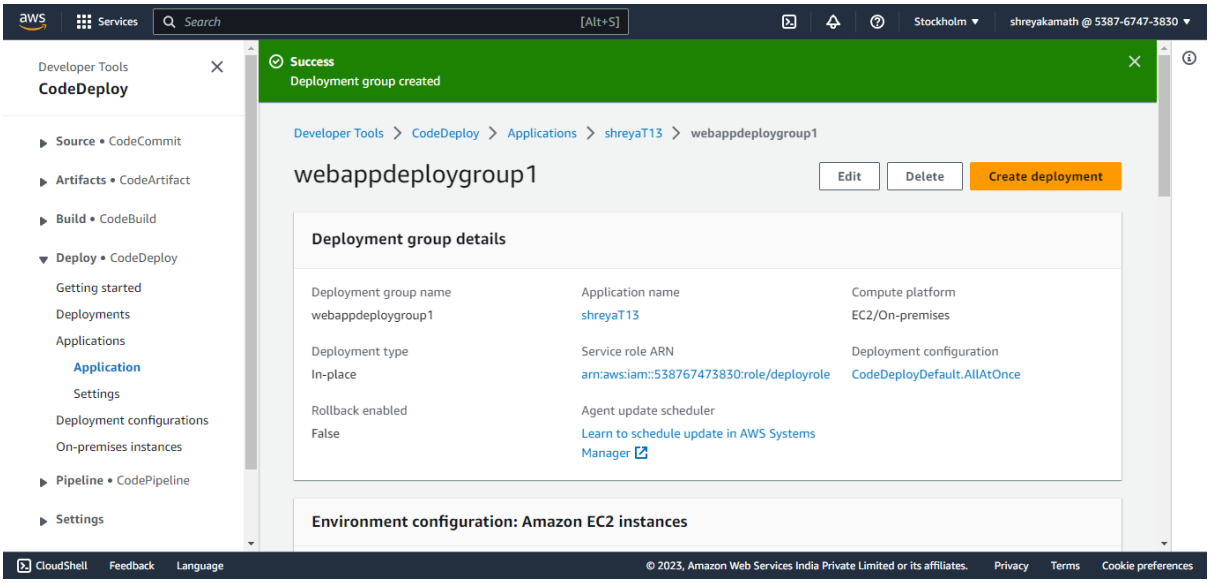
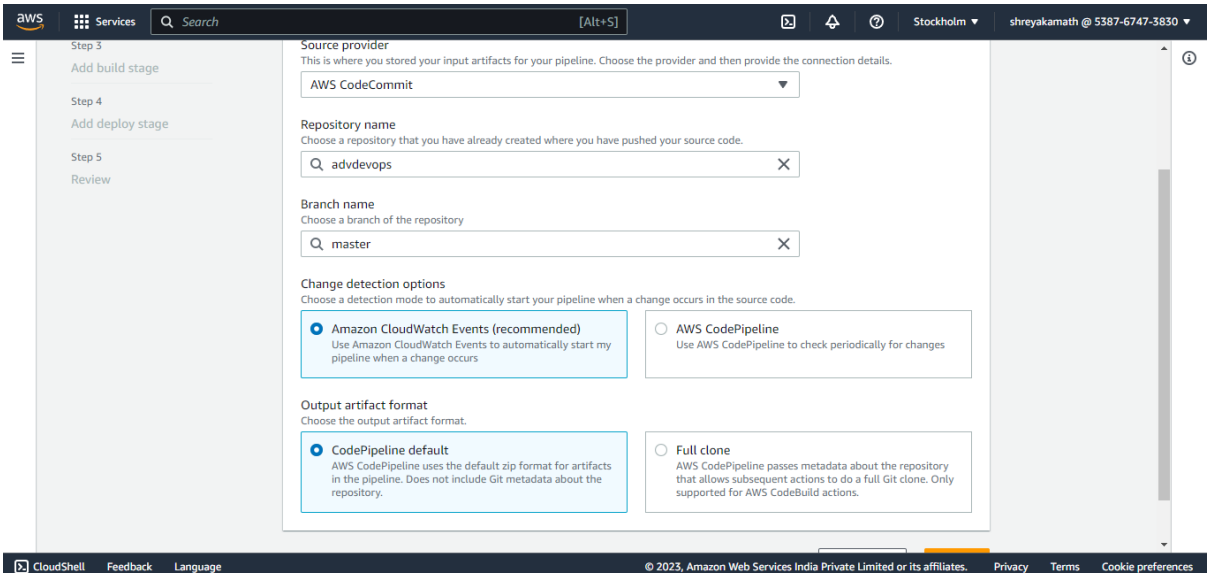
9) Create a new application and give name to it , create a deployment group for deployment of application created

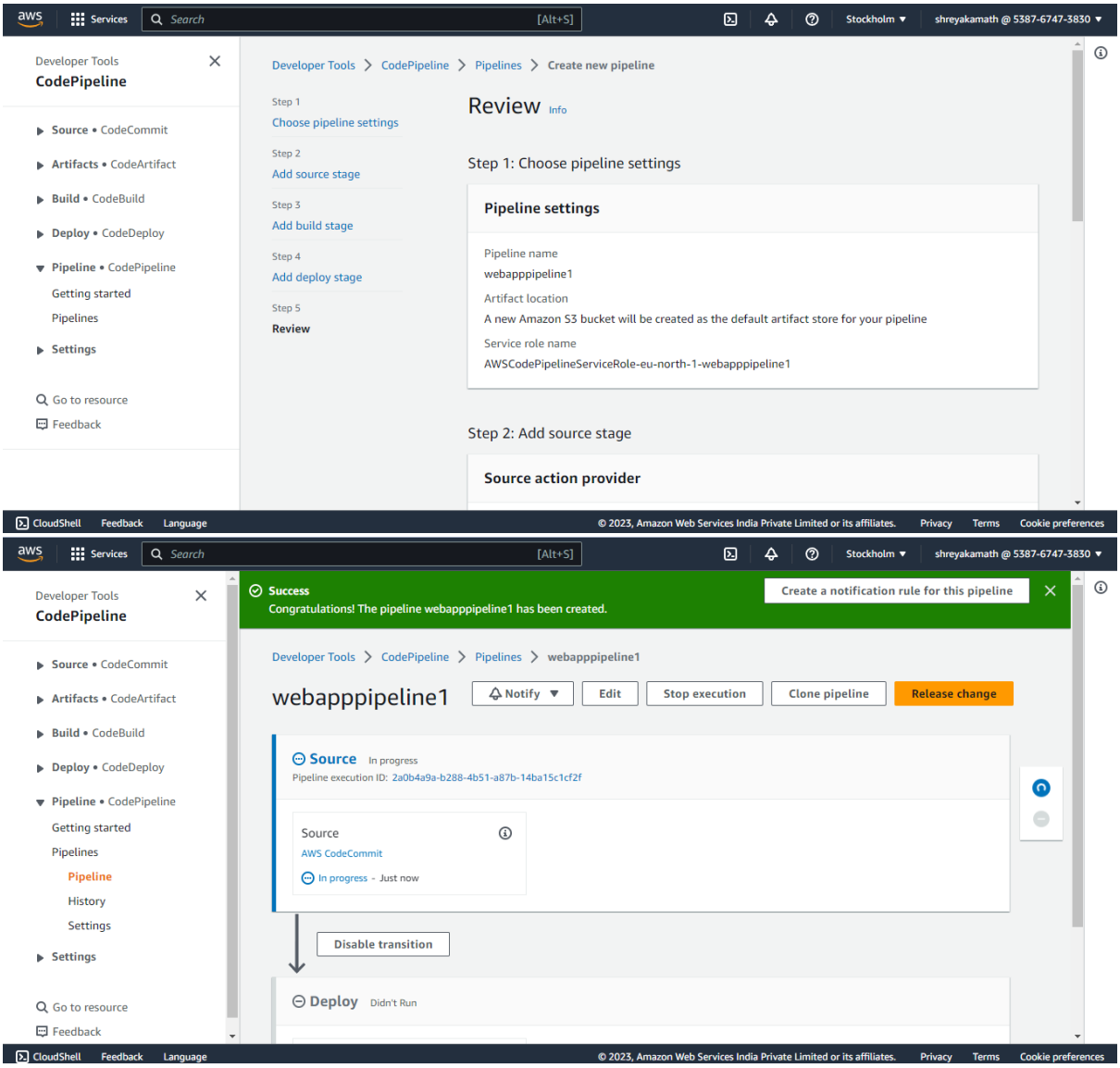




10) Select the source provider , artifact



11) Review the application and then click on deploy , after deploying success message is displayed on screen



Conclusion :-

Learnt about creation and deployment of web application using AWS codepipeline ,hence learnt about basic components of codepipeline in AWS such as codebuild , codecommit , codedeploy and built , committed and deployed a web application using codepipeline