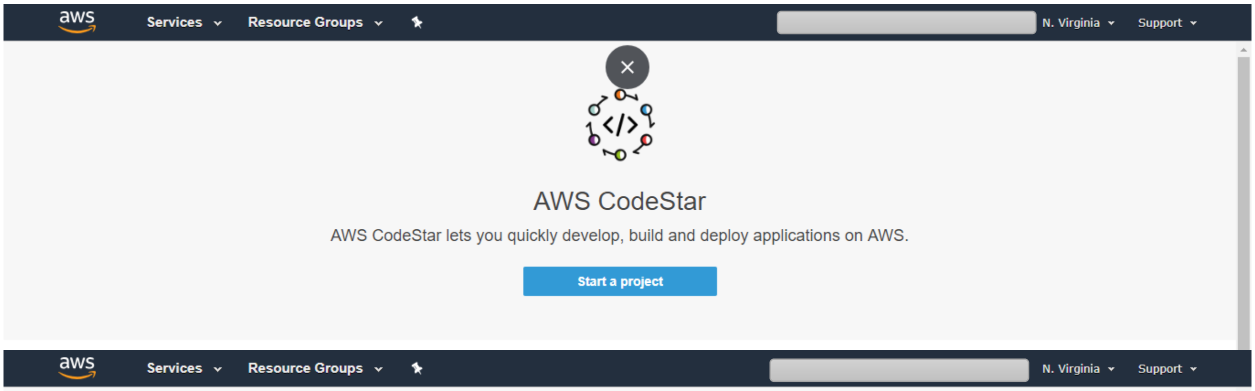
AWS CODESTAR

ACCENTURE CDC2

AWS CODESTAR

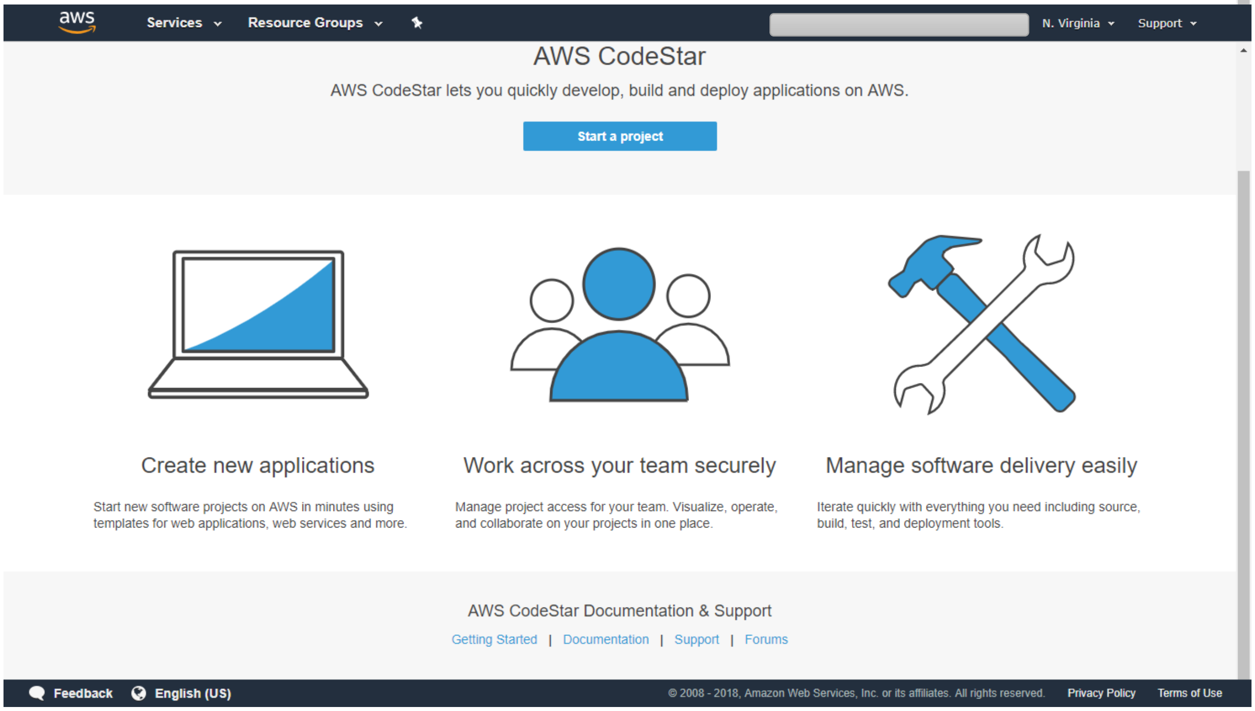
In this document we will discuss about developer tools in the AWS. The below detailed screen shots will take you through the step by step by instruction to use the developer tools for development.

In our scenario we need to do the development collaboratively within our team and need to do the build and deployment in pipeline. Here we no need to worry about the repository to store the source code and IDE for editing the code and code build to compile and then to deploy the code using code deploy.



AWS CodeStar

AWS CodeStar lets you quickly develop, build and deploy applications on AWS.



AWS CodeStar

AWS CodeStar lets you quickly develop, build and deploy applications on AWS.

Create new applications

Start new software projects on AWS in minutes using templates for web applications, web services and more.

Work across your team securely

Manage project access for your team. Visualize, operate, and collaborate on your projects in one place.

Manage software delivery easily

Iterate quickly with everything you need including source, build, test, and deployment tools.

AWS CodeStar Documentation & Support

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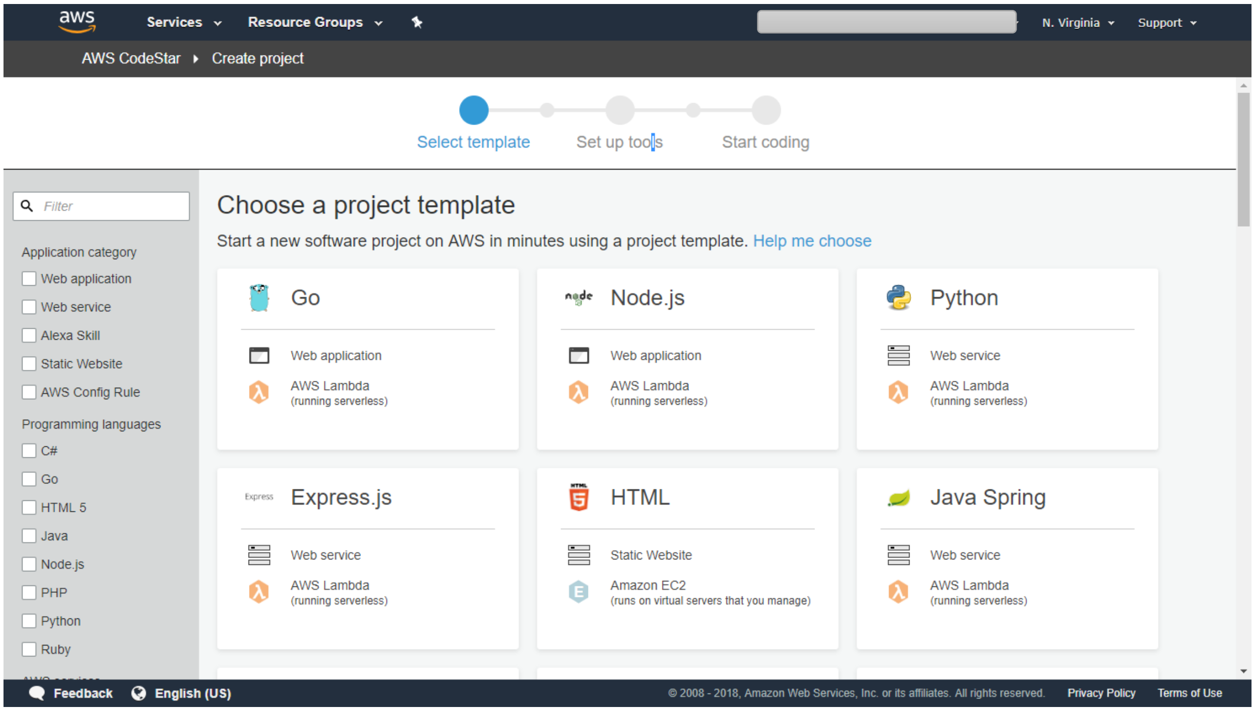
Click to start a new project and proceed with code.

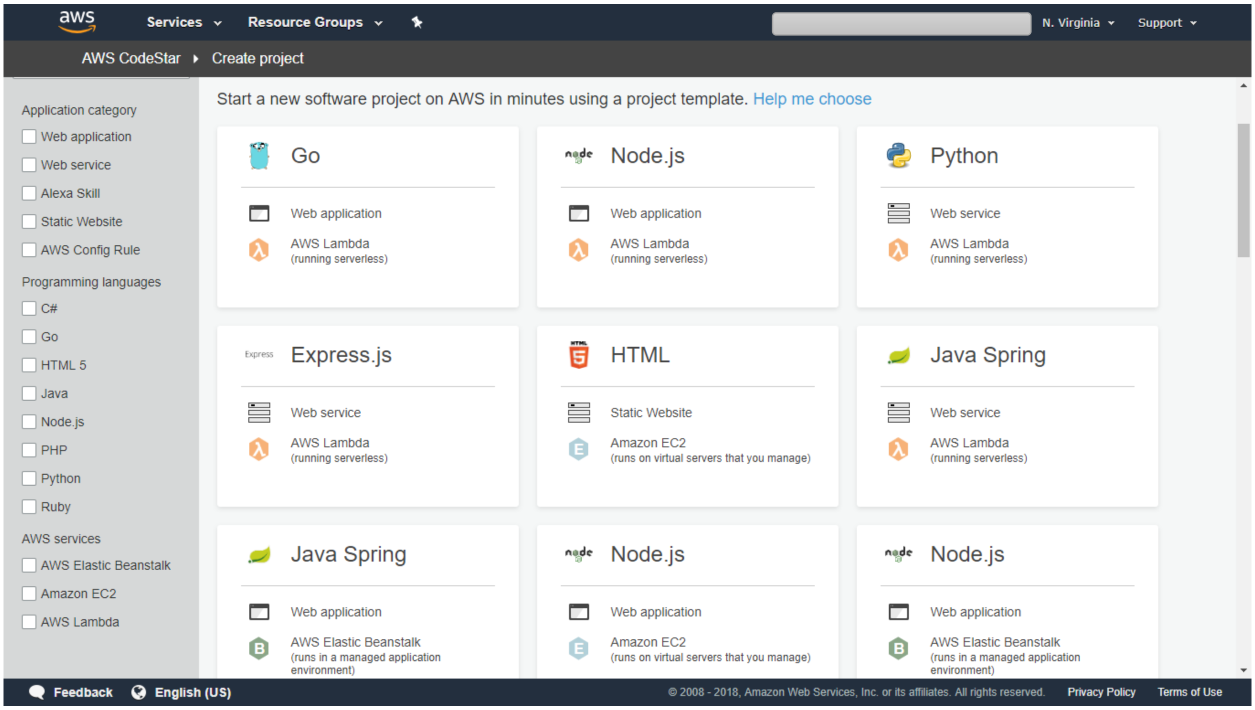


Choose a project template

Start a new software project on AWS in minutes using a project template. Help me choose

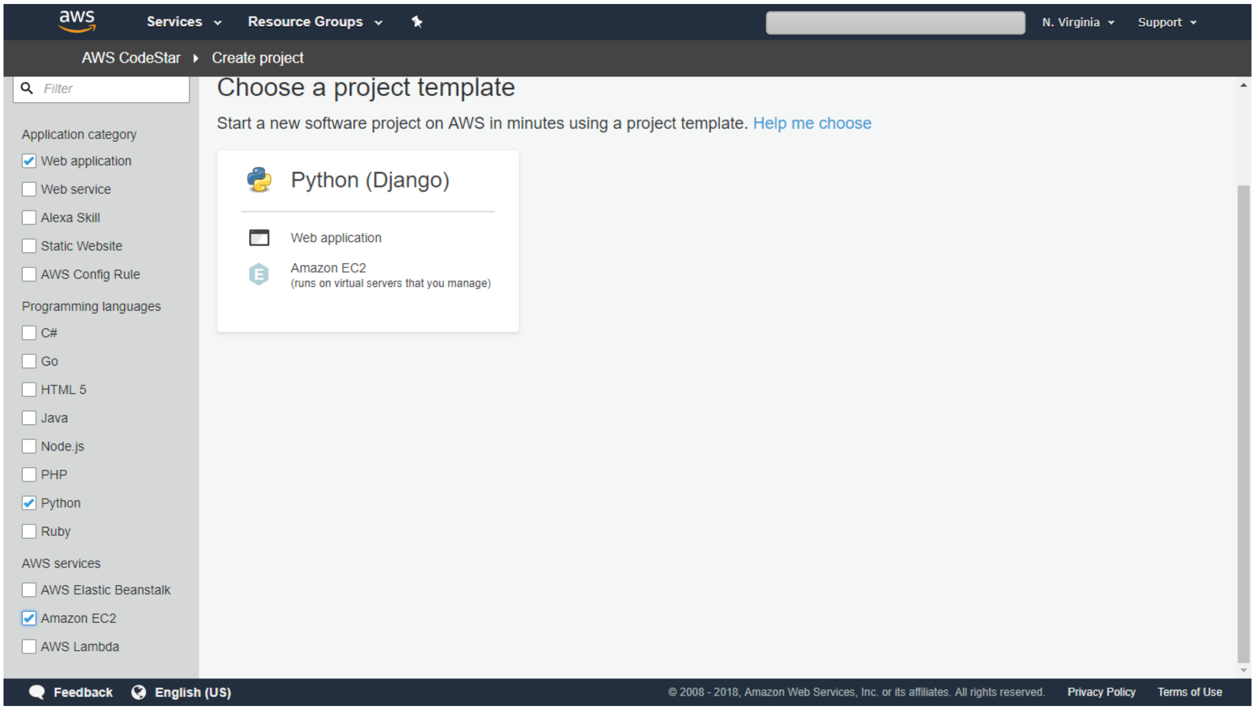
Select a category to choose the template

Here I need to deploy a Web Application and the Programming Language is Python also we need to choose the infrastructure how we need to deploy the Project.



Start a new software project on AWS in minutes using a project template. Help me choose

Here am selecting Application Category as ‘Web Application’ and Programming Language as ‘Python’ and the infrastructure as Amazon EC2.



Choose a project template

Start a new software project on AWS in minutes using a project template. Help me choose

Application category

☑ Web application
☐ Web service
☐ Alexa Skill
☐ Static Website
☐ AWS Config Rule

Programming languages

☐ C#
☐ Go
☐ HTML 5
☐ Java
☐ Node.js
☐ PHP
☑ Python
☐ Ruby

AWS services

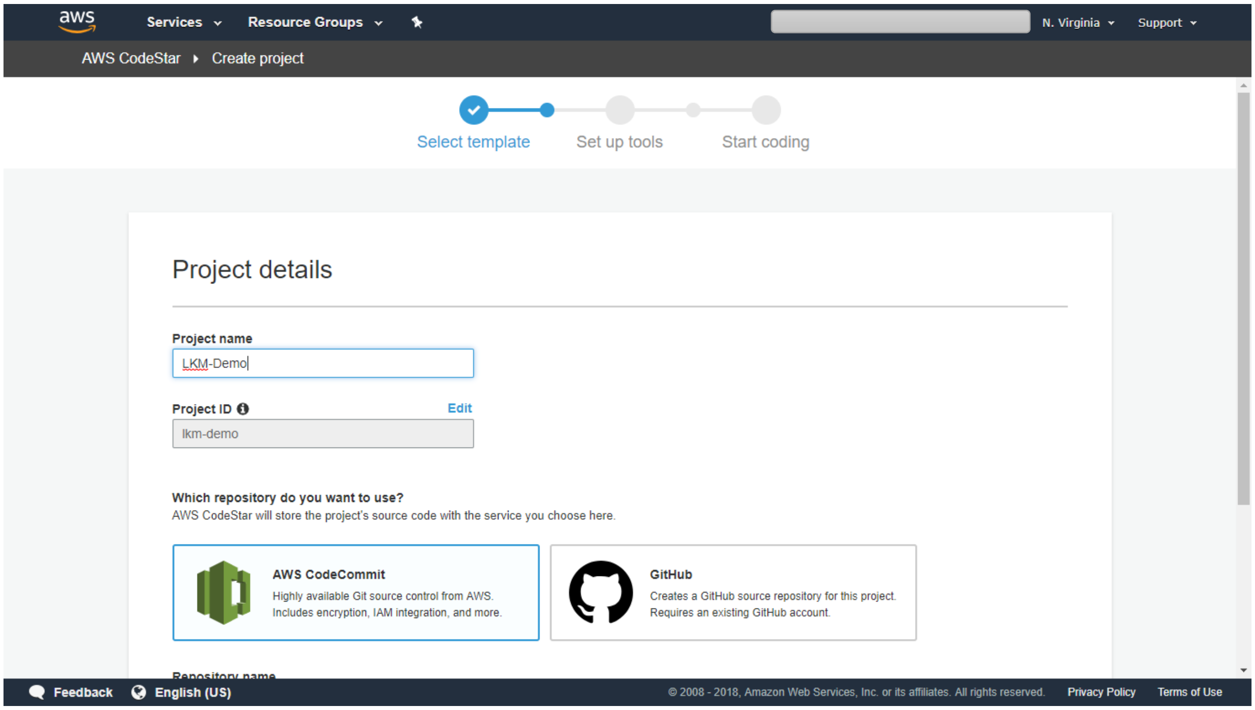
☐ AWS Elastic Beanstalk
☑ Amazon EC2
☐ AWS Lambda

Python (Django)

Web application

Amazon EC2
(runs on virtual servers that you manage)

After the filter we have one template with Python Django Web Application. Select the template



Project details

Project name: LKM-Demo

Project ID: lkm-demo

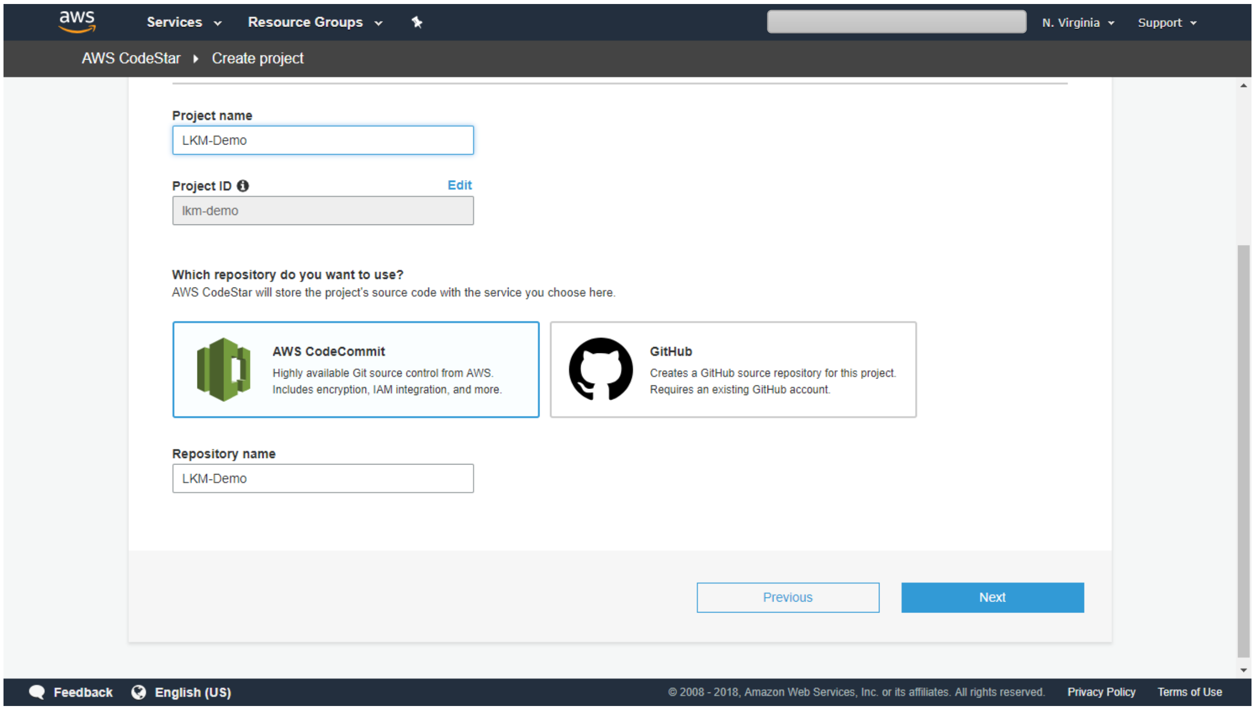
Which repository do you want to use?
AWS CodeStar will store the project's source code with the service you choose here.

AWS CodeCommit
Highly available Git source control from AWS. Includes encryption, IAM integration, and more.

GitHub
Creates a GitHub source repository for this project. Requires an existing GitHub account.

Repository name

Provide the project name and proceed with selecting the repositories and other tools like IDE for editing the code, we can choose the Code Commit or GitHub as your repository here am using the Code Commit for repository



Project name
LKM-Demo

Project ID
lkm-demo

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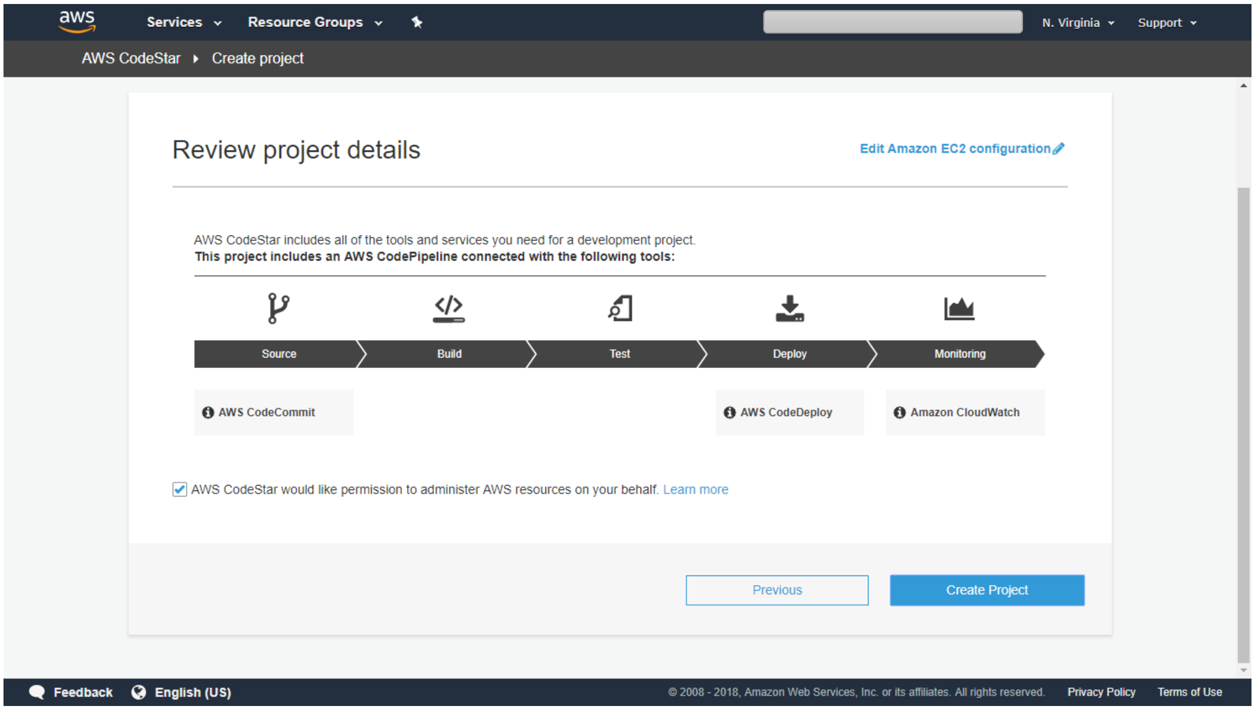
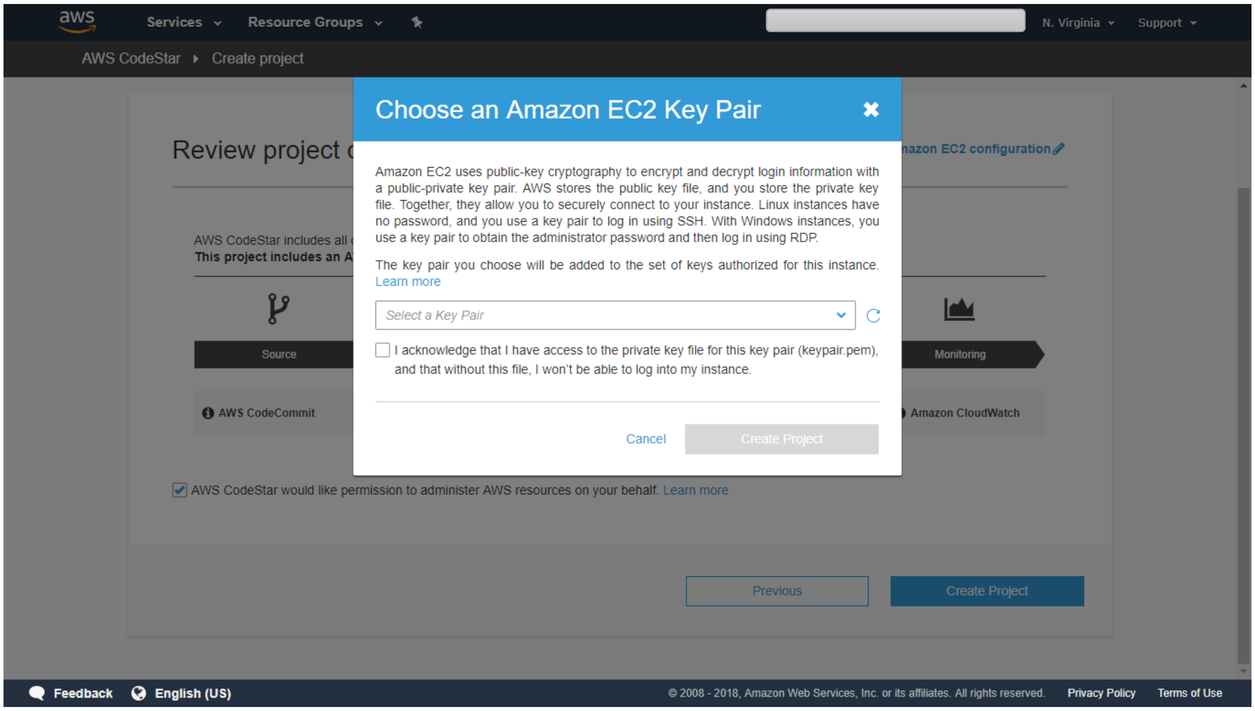


Review project details

AWS CodeStar includes all of the tools and services you need for a development project.
This project includes an AWS CodePipeline connected with the following tools:

☑ AWS CodeStar would like permission to administer AWS resources on your behalf.

Please make sure the check box is selected to allow Code Star to manage the associated resources and then create project. Since Code Star will be launching other related developer tools.



Choose an Amazon EC2 Key Pair

Amazon EC2 uses public-key cryptography to encrypt and decrypt login information with a public-private key pair. AWS stores the public key file, and you store the private key file. Together, they allow you to securely connect to your instance. Linux instances have no password, and you use a key pair to log in using SSH. With Windows instances, you use a key pair to obtain the administrator password and then log in using RDP.

The key pair you choose will be added to the set of keys authorized for this instance. Learn more

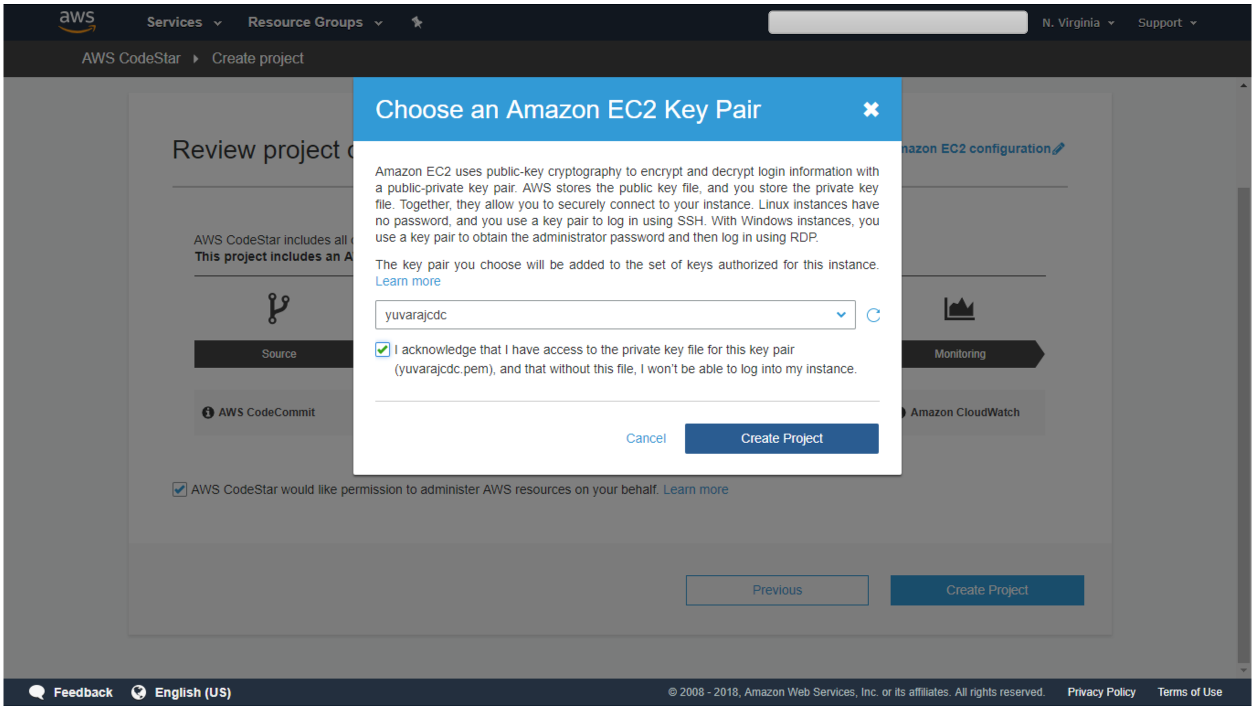
Select a Key Pair

□ I acknowledge that I have access to the private key file for this key pair (keypair.pem), and that without this file, I won't be able to log into my instance.

Cancel | Create Project

☑ AWS CodeStar would like permission to administer AWS resources on your behalf. Learn more

Select the appropriate key pair and create project



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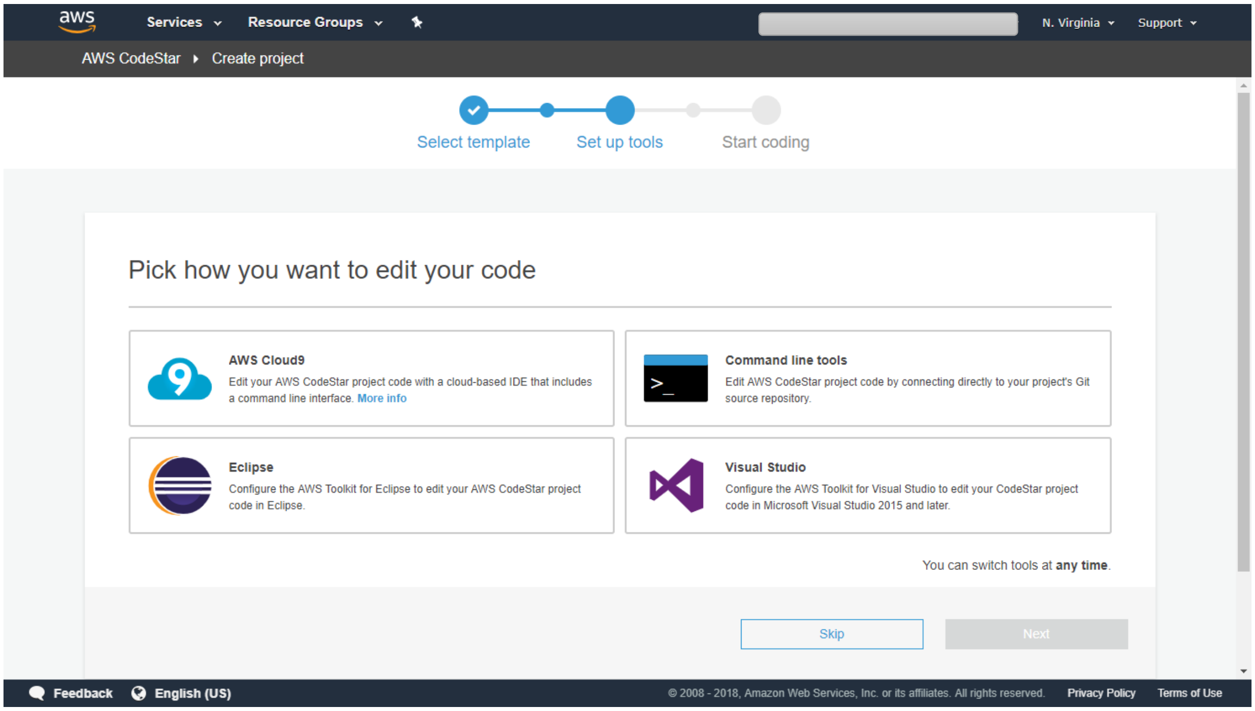
The key pair you choose will be added to the set of keys authorized for this instance. Learn more

yuvarajcdc

☑ I acknowledge that I have access to the private key file for this key pair (yuvarajcdc.pem), and that without this file, I won't be able to log into my instance.

Cancel | Create Project

☑ AWS CodeStar would like permission to administer AWS resources on your behalf. Learn more



Pick how you want to edit your code

AWS Cloud9
Edit your AWS CodeStar project code with a cloud-based IDE that includes a command line interface. More info

Command line tools
Edit AWS CodeStar project code by connecting directly to your project's Git source repository.

Eclipse
Configure the AWS Toolkit for Eclipse to edit your AWS CodeStar project code in Eclipse.

Visual Studio
Configure the AWS Toolkit for Visual Studio to edit your CodeStar project code in Microsoft Visual Studio 2015 and later.

You can switch tools at **any time**.

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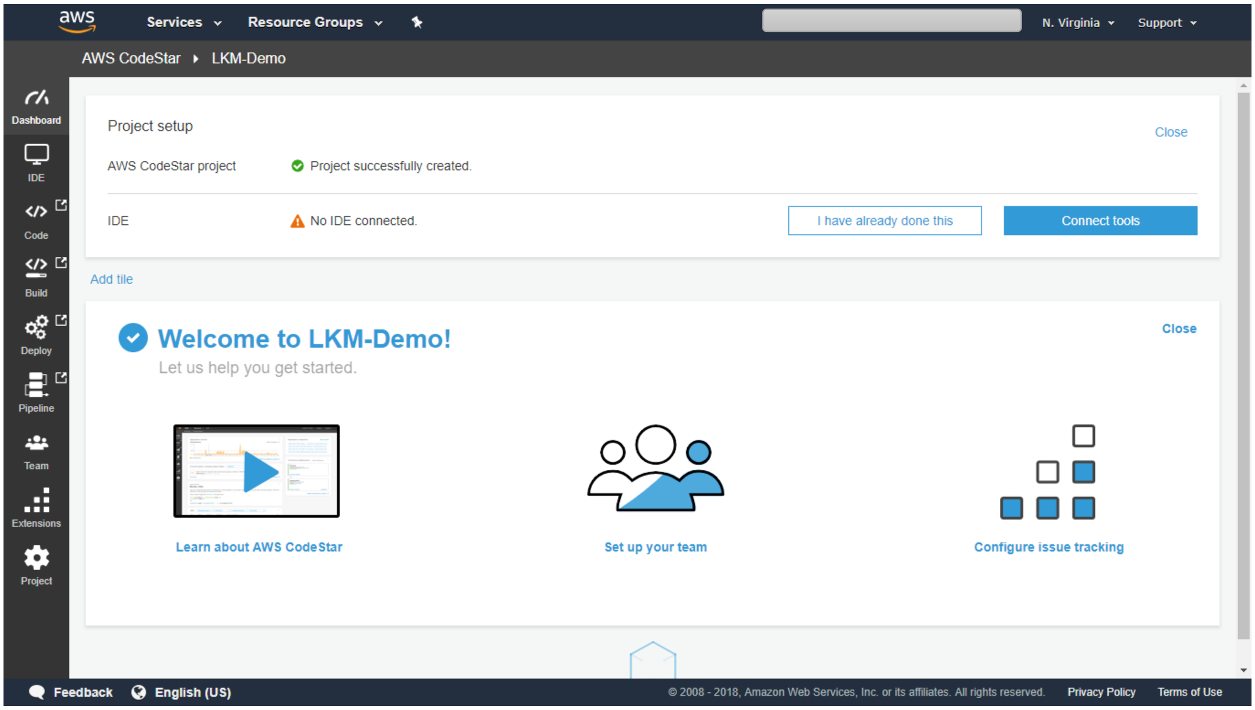
You can choose anyone editor and we can use the SDK to work with third party editor like eclipse or visual studio otherwise choose the AWS Cloud9 editor for code or as of now we can even skip the step



Project setup

AWS CodeStar project	✓ Project successfully created.
IDE	⚠ No IDE connected.

Welcome to LKM-Demo!
Let us help you get started.

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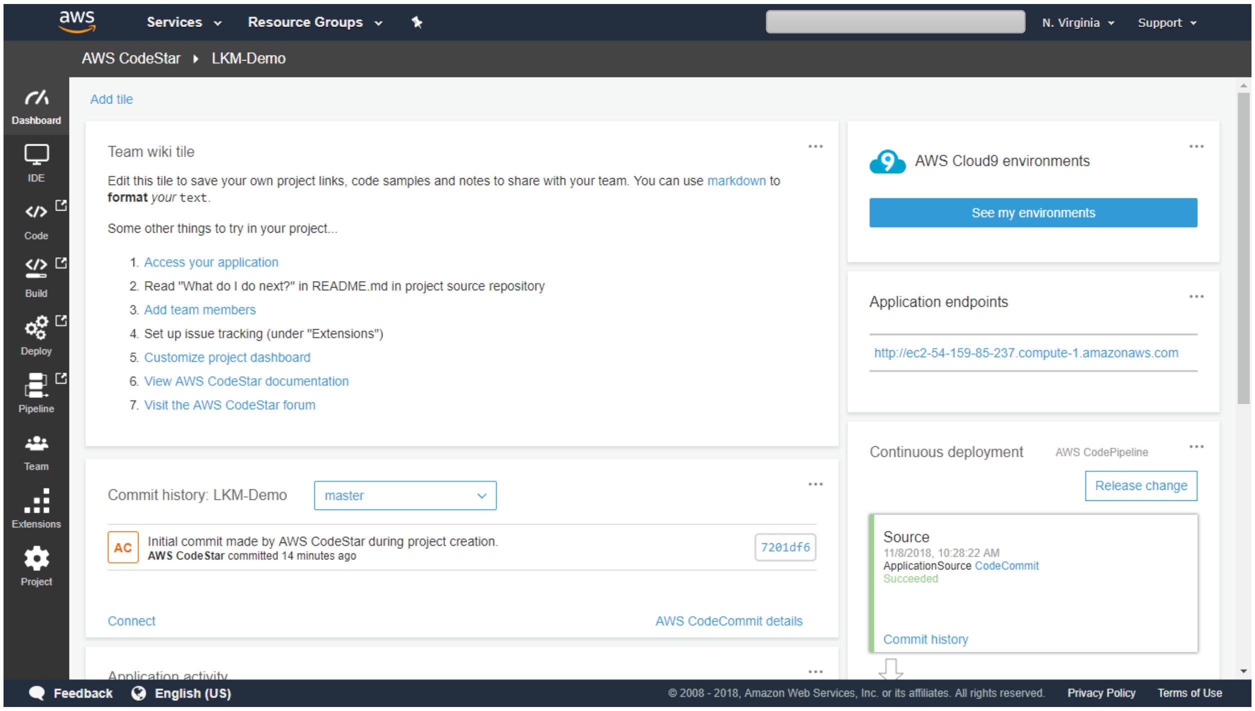
Once the project is created successfully we can check the dashboard

AWS CODESTAR



Team wiki tile

Edit this tile to save your own project links, code samples and notes to share with your team. You can use markdown to **format** *your* `text`.

Some other things to try in your project...

1. Access your application
2. Read "What do I do next?" in README.md in project source repository
3. Add team members
4. Set up issue tracking (under "Extensions")
5. Customize project dashboard
6. View AWS CodeStar documentation
7. Visit the AWS CodeStar forum

AWS Cloud9 environments

Application endpoints

http://ec2-54-159-85-237.compute-1.amazonaws.com

Commit history: LKM-Demo

AC Initial commit made by AWS CodeStar during project creation.
AWS CodeStar committed 14 minutes ago 7201df6

Continuous deployment AWS CodePipeline

Source
11/8/2018, 10:28:22 AM
ApplicationSource CodeCommit
Succeeded
Commit history

Application activity

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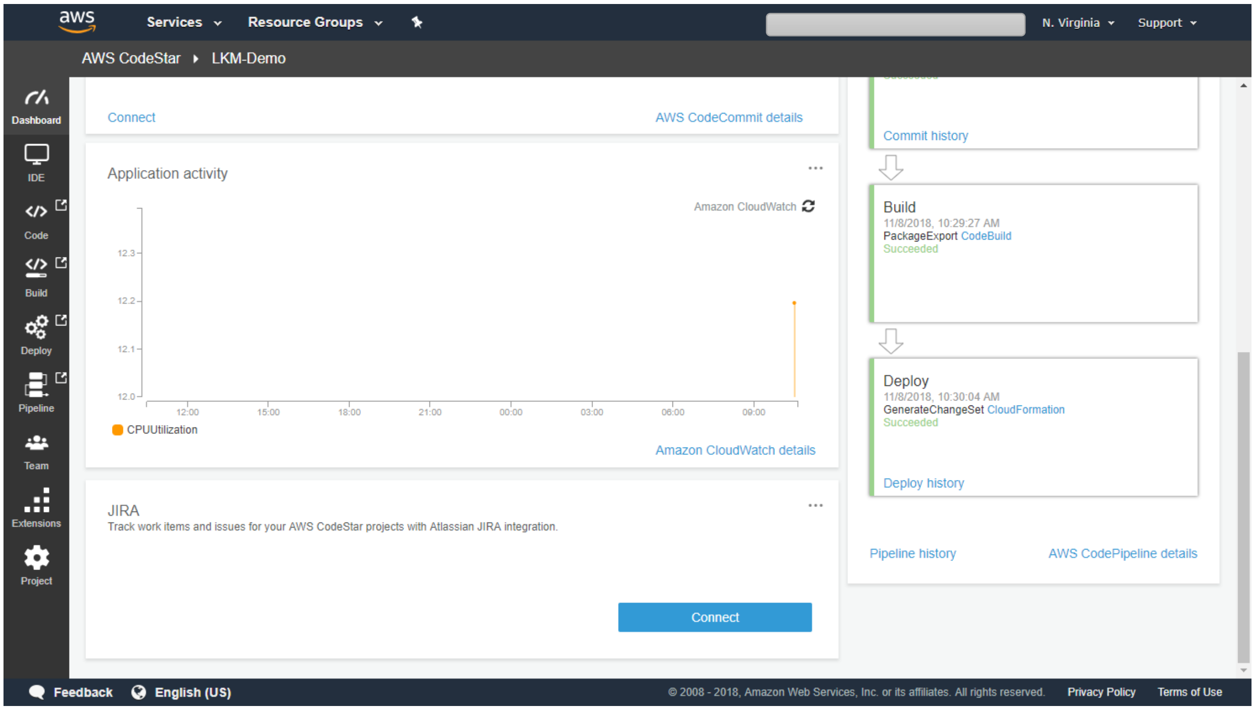

Application activity

Build
11/8/2018, 10:29:27 AM
PackageExport CodeBuild
Succeeded

Deploy
11/8/2018, 10:30:04 AM
GenerateChangeSet CloudFormation
Succeeded

JIRA
Track work items and issues for your AWS CodeStar projects with Atlassian JIRA integration.

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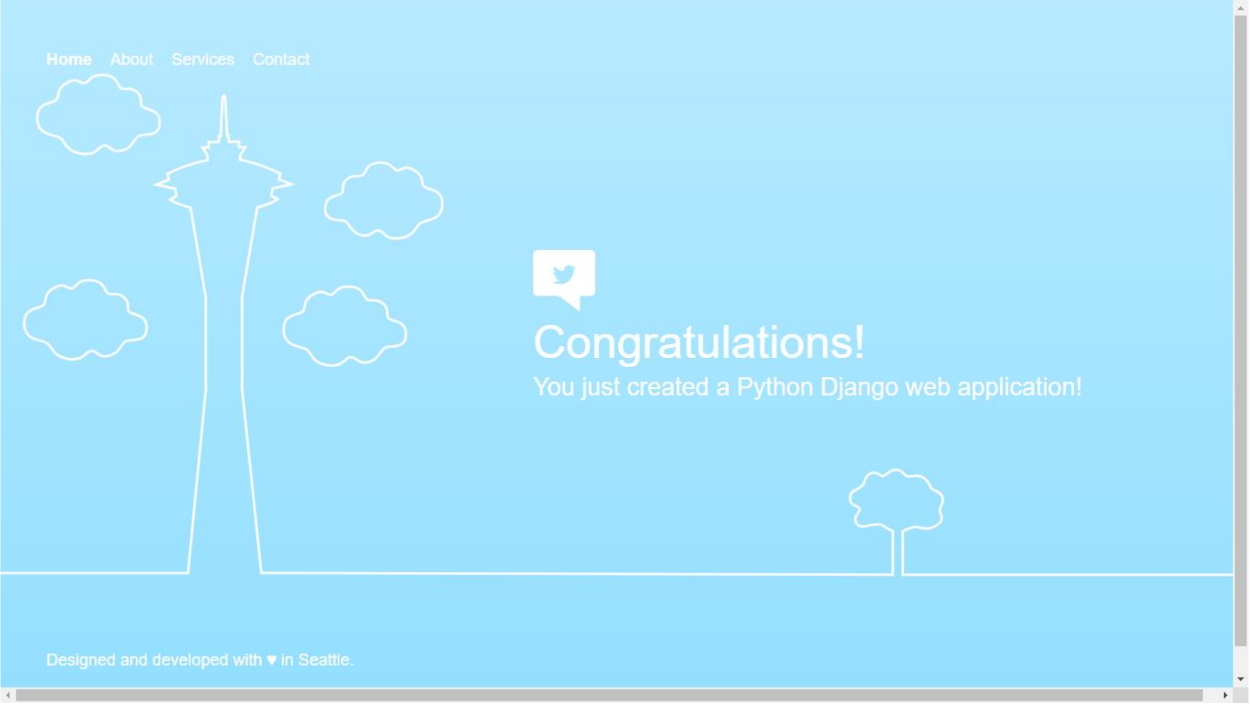


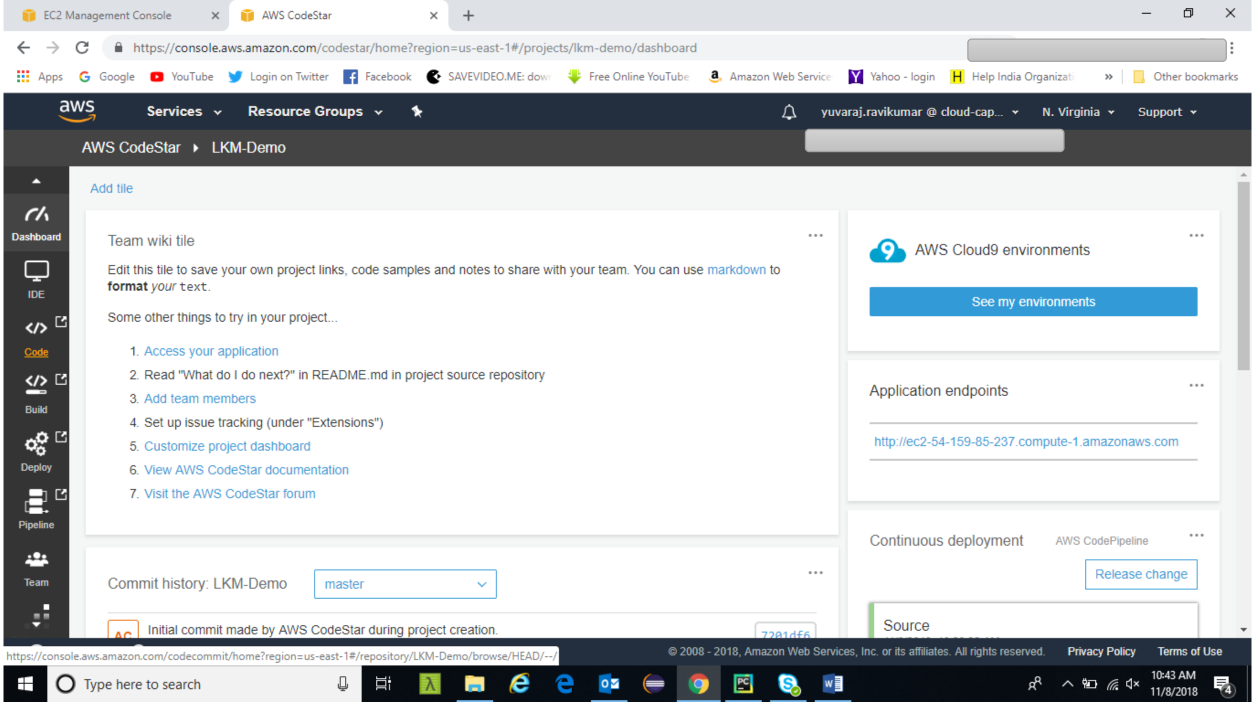
Congratulations!

You just created a Python Django web application!

Designed and developed with ♥ in Seattle.

We can check the endpoint of the Web Application Template once the project is deployed.

Later we can go to code repositories and make any change to the code and build the changes.



Team wiki tile

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http://ec2-54-159-85-237.compute-1.amazonaws.com

AC Initial commit made by AWS CodeStar during project creation. 7201df6

https://console.aws.amazon.com/codecommit/home?region=us-east-1#/repository/LKM-Demo/browse/HEAD/--/

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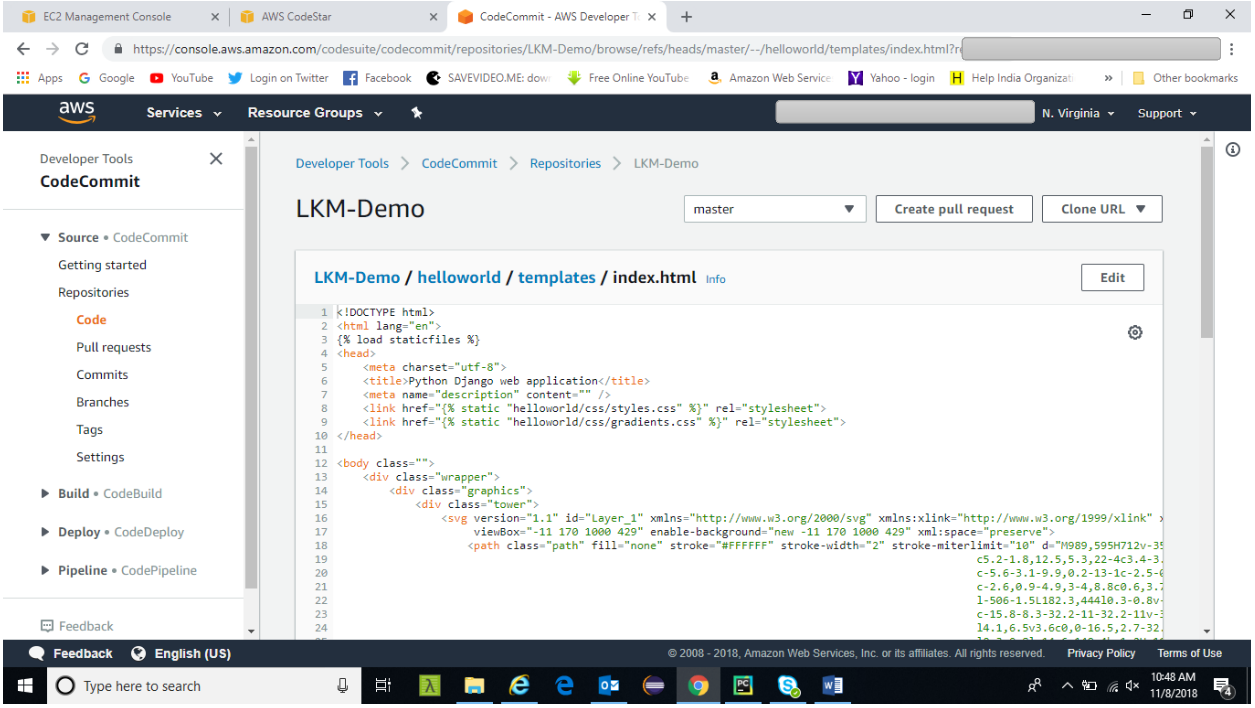
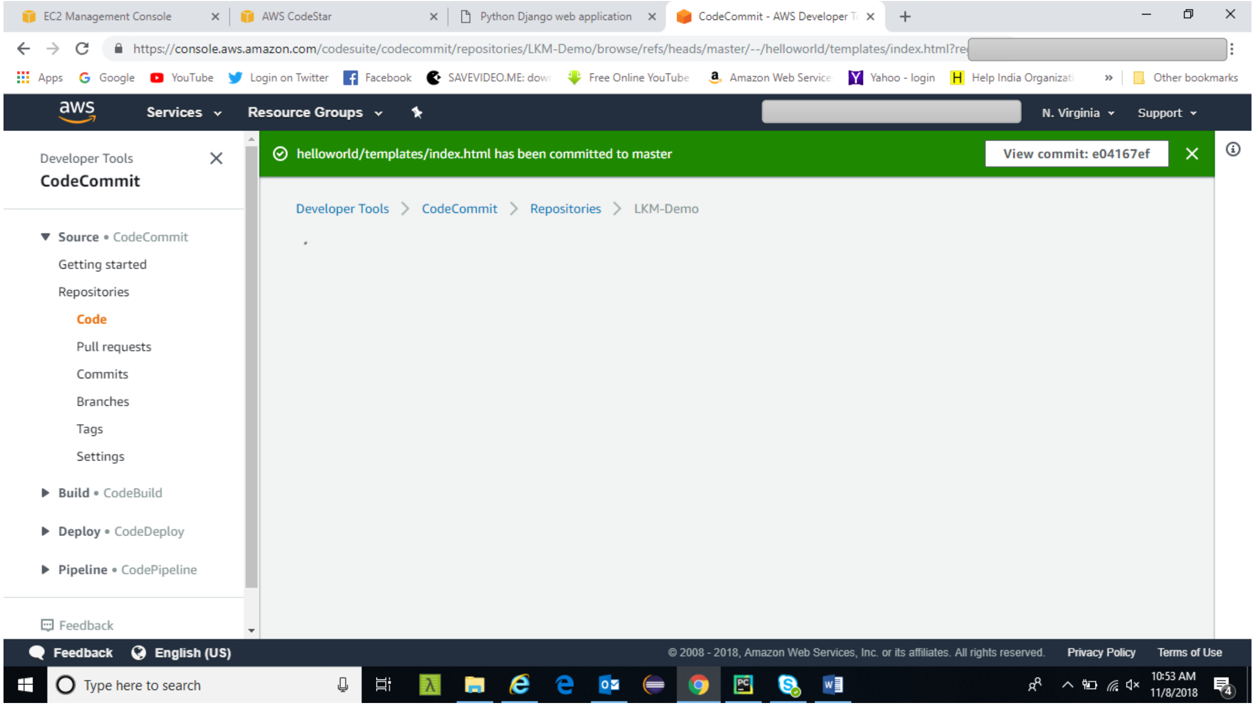
Select the code in the left-hand side dashboard and proceed exploring the default template and update the code if required.



LKM-Demo / helloworld / templates / index.html

```
<!DOCTYPE html>
<html lang="en">
{% load staticfiles %}
<head>
    <meta charset="utf-8">
    <title>Python Django web application</title>
    <meta name="description" content="" />
    <link href="{% static "helloworld/css/styles.css" %}" rel="stylesheet">
    <link href="{% static "helloworld/css/gradients.css" %}" rel="stylesheet">
</head>

<body class="">
    <div class="wrapper">
        <div class="graphics">
            <div class="tower">
                <svg version="1.1" id="Layer_1" xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/xlink"
                     viewBox="-11 170 1000 429" enable-background="new -11 170 1000 429" xml:space="preserve">
                    <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M989,595H712v-35
                                                                                                  c5.2-1.8,12.5,5.3,22-4c3.4-3.
                                                                                                  c-5.6-3.1-9.9,0.2-13-1c-2.5-
                                                                                                  c-2.6,0.9-4.9,3-4,8.8c0.6,3.
                                                                                                  l-506-1.5L182.3,444l0.3-0.8v
                                                                                                  c-15.8-8.3-32.2-11-32.2-11v-
                                                                                                  l4.1,6.5v3.6c0,0-16.5,2.7-32.
```

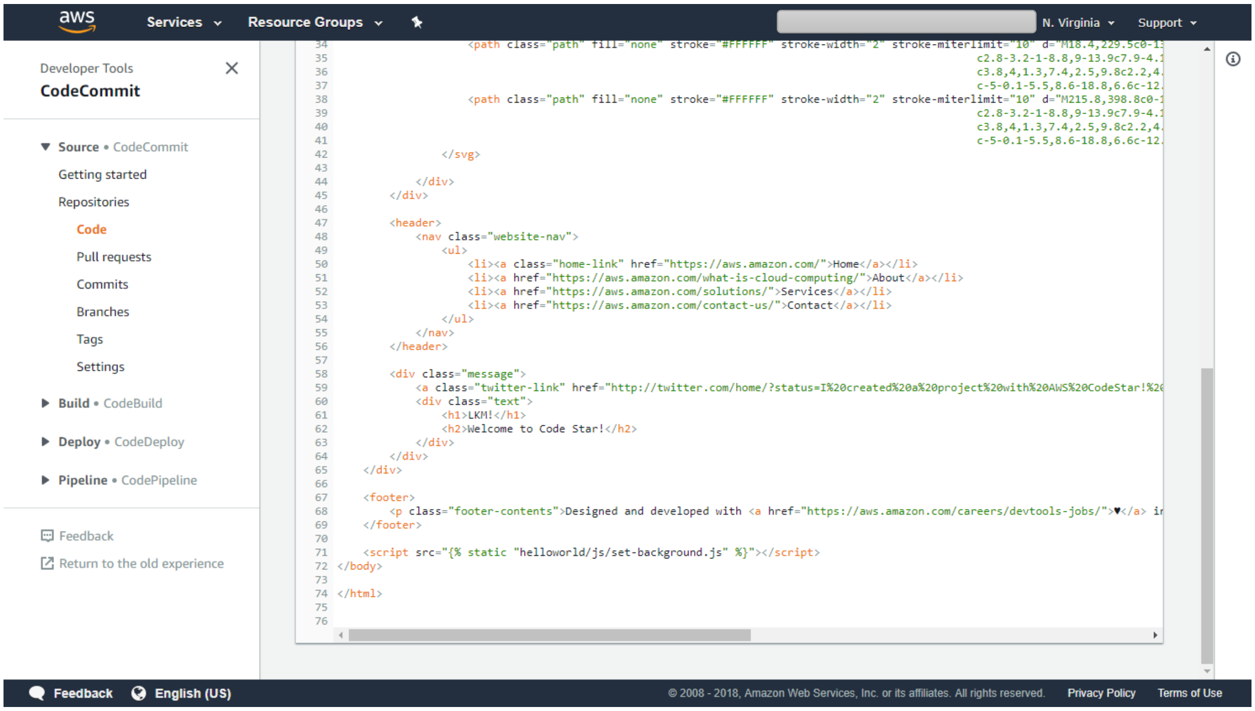
Change the HTML Page alone in our scenario and then build to see the changes



helloworld/templates/index.html has been committed to master

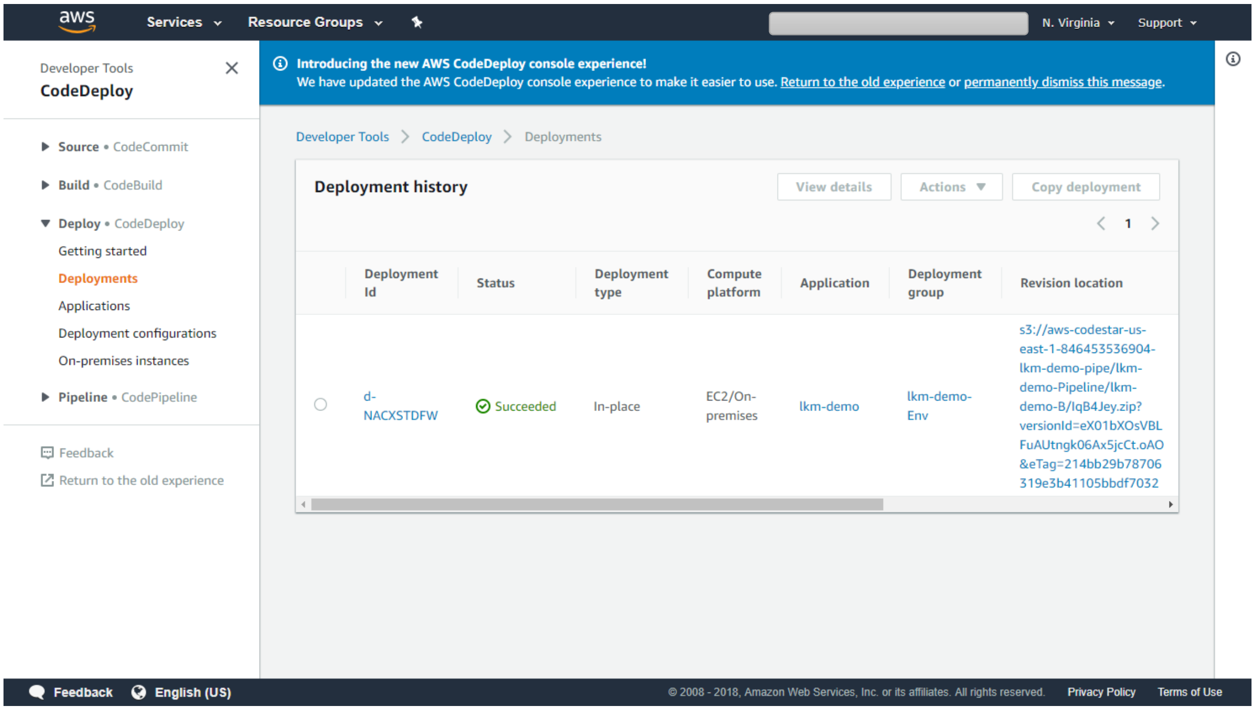
View commit: e04167ef

I have make the changes to the ‘index.html’ and committed the code.



```
                    <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M18.4,229.5c0-1
                                                                                                   c2.8-3.2-1-8.8,9-13.9c7.9-4.1
                                                                                                   c3.8,4,1.3,7.4,2.5,9.8c2.2,4.
                                                                                                   c-5-0.1-5.5,8.6-18.8,6.6c-12.
                    <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M215.8,398.8c0-1
                                                                                                   c2.8-3.2-1-8.8,9-13.9c7.9-4.1
                                                                                                   c3.8,4,1.3,7.4,2.5,9.8c2.2,4.
                                                                                                   c-5-0.1-5.5,8.6-18.8,6.6c-12.
                </svg>

            </div>
        </div>

        <header>
            <nav class="website-nav">
                <ul>
                    <li><a class="home-link" href="https://aws.amazon.com/">Home</a></li>
                    <li><a href="https://aws.amazon.com/what-is-cloud-computing/">About</a></li>
                    <li><a href="https://aws.amazon.com/solutions/">Services</a></li>
                    <li><a href="https://aws.amazon.com/contact-us/">Contact</a></li>
                </ul>
            </nav>
        </header>

        <div class="message">
            <a class="twitter-link" href="http://twitter.com/home/?status=I%20created%20a%20project%20with%20AWS%20CodeStar!%2
            <div class="text">
                <h1>LKM!</h1>
                <h2>Welcome to Code Star!</h2>
            </div>
        </div>
    </div>

    <footer>
        <p class="footer-contents">Designed and developed with <a href="https://aws.amazon.com/careers/devtools-jobs/">♥</a> ir
    </footer>

    <script src="{% static "helloworld/js/set-background.js" %}"></script>
</body>

</html>
```

Go for deployments and see the latest deployments



Introducing the new AWS CodeDeploy console experience!
We have updated the AWS CodeDeploy console experience to make it easier to use. Return to the old experience or permanently dismiss this message.

Deployment history

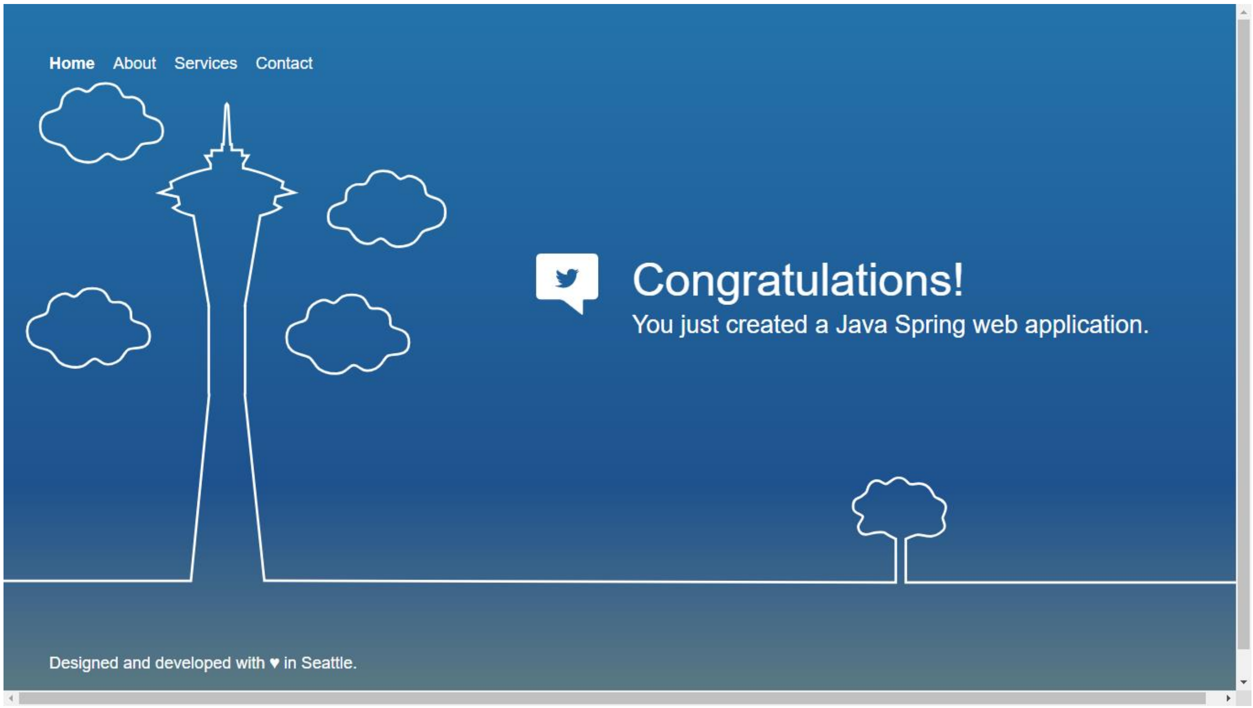
	Deployment Id	Status	Deployment type	Compute platform	Application	Deployment group	Revision location
○	d-NACXSTDFW	✓ Succeeded	In-place	EC2/On-premises	lkm-demo	lkm-demo-Env	s3://aws-codestar-us-east-1-846453536904-lkm-demo-pipe/lkm-demo-Pipeline/lkm-demo-B/lqB4Jey.zip?versionId=eX01bXOsVBLFuAUtngk06Ax5jcCt.oAO&eTag=214bb29b78706319e3b41105bbdf7032

The above is the latest deployment and wait for the new commit to deployment.

Scenario 2:

The team after the first deployment is getting ready with the latest commit as per the requirement given by the Client, now the following steps take through the continuous integration and deployment happening after the new commit

In this scenario, create a sample Java Application with the same configuration as python

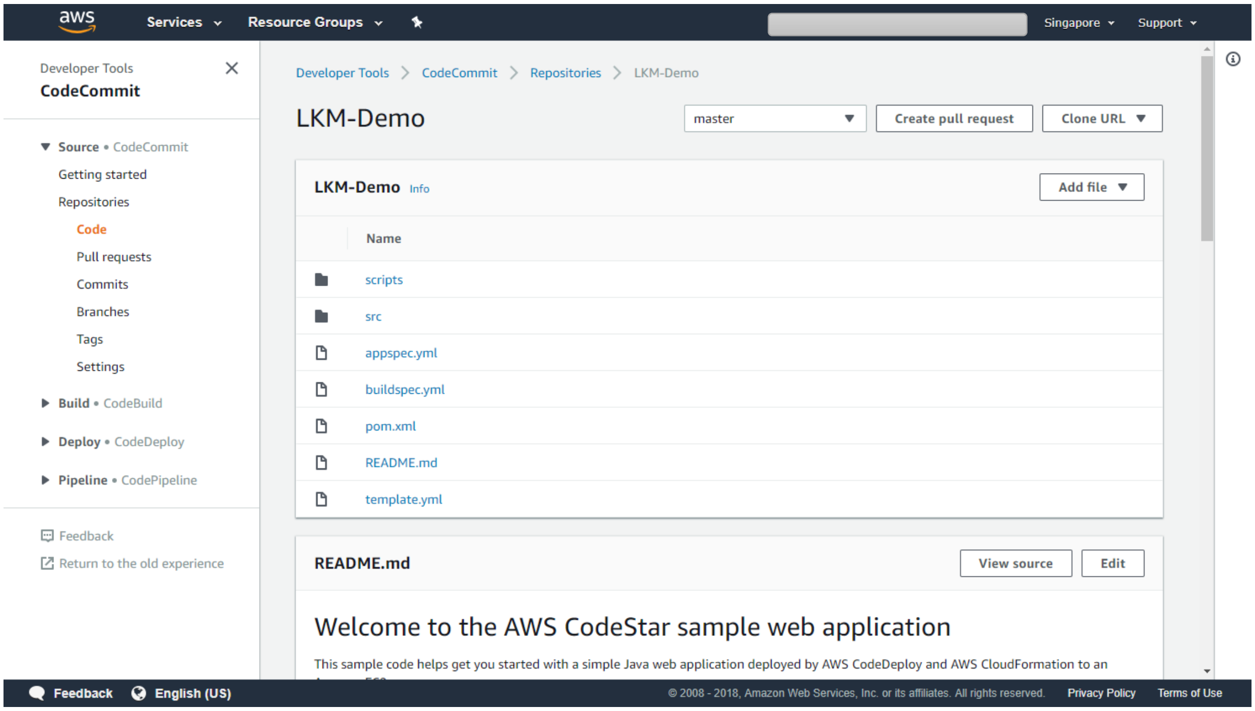


Congratulations!

You just created a Java Spring web application.

Designed and developed with ♥ in Seattle.

Once the above application is deployed, please proceed with changes to understand the CI / CD happening automatically once the new commit is done from the build

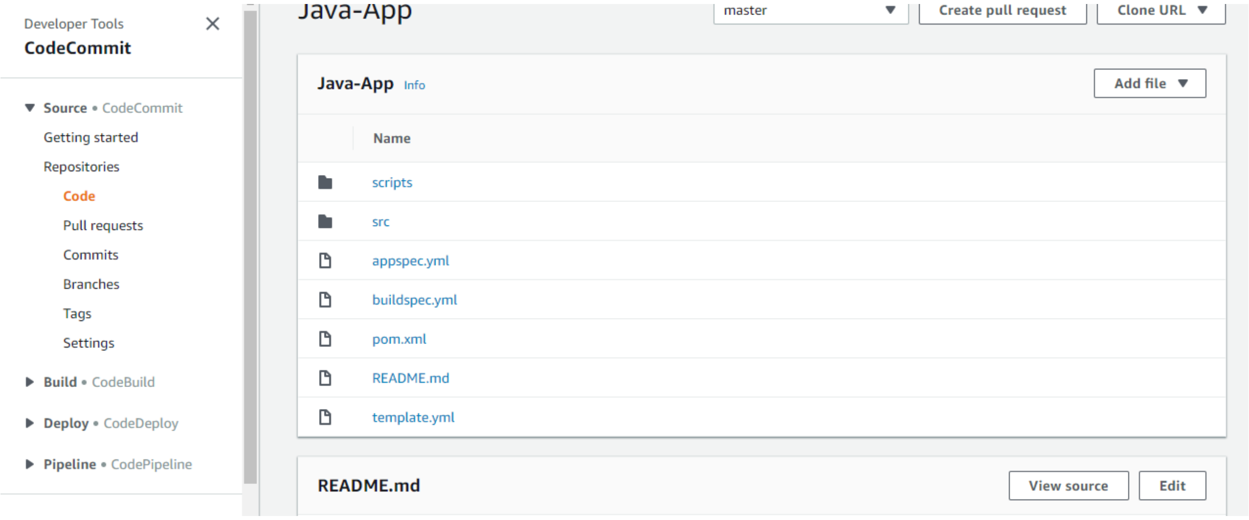


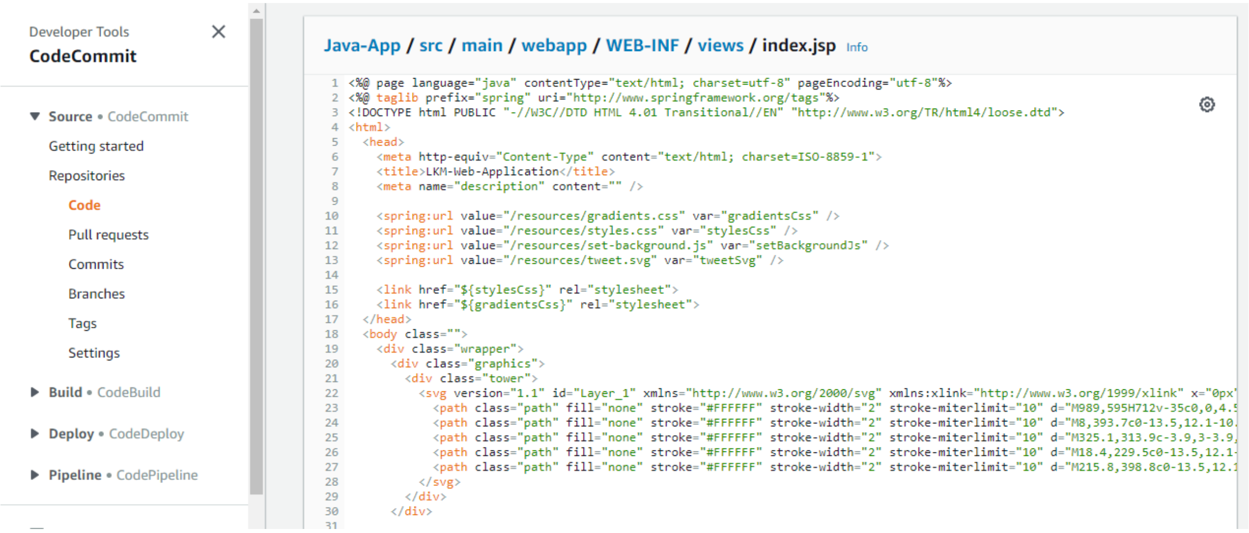
Welcome to the AWS CodeStar sample web application

This sample code helps get you started with a simple Java web application deployed by AWS CodeDeploy and AWS CloudFormation to an

Get inside the repositories and update the code as per the customer requirement or adding a new feature and commit the changes.

In this scenario, we are updating the code in the 'html' section.

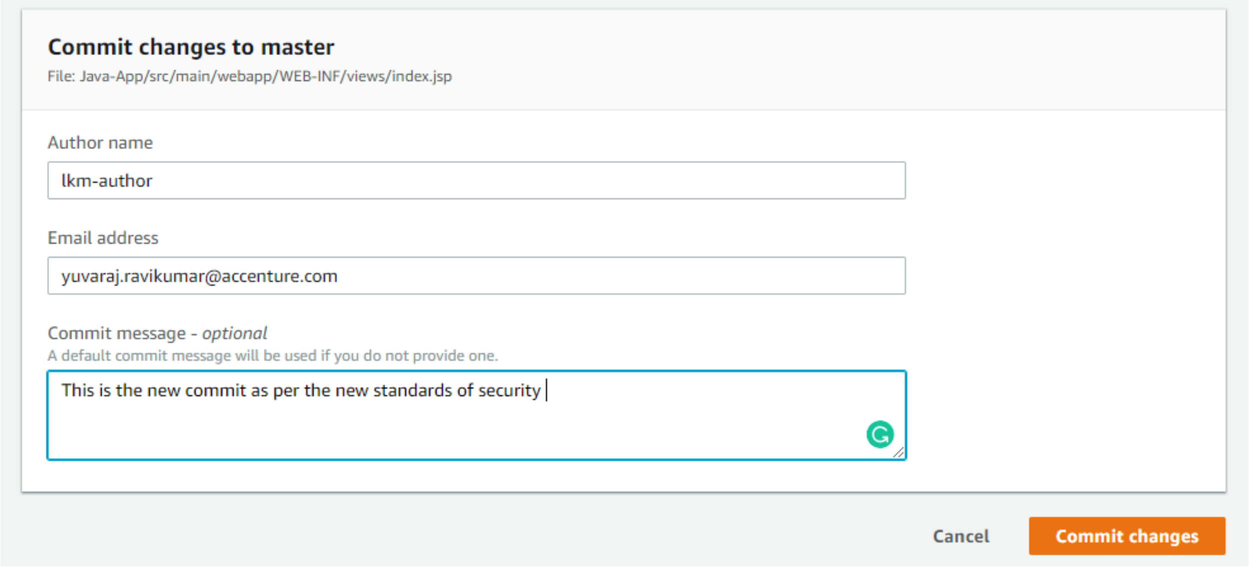




Java-App / src / main / webapp / WEB-INF / views / index.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8"%>
<%@ taglib prefix="spring" uri="http://www.springframework.org/tags"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>LKM-Web-Application</title>
    <meta name="description" content="" />

    <spring:url value="/resources/gradients.css" var="gradientsCss" />
    <spring:url value="/resources/styles.css" var="stylesCss" />
    <spring:url value="/resources/set-background.js" var="setBackgroundJs" />
    <spring:url value="/resources/tweet.svg" var="tweetSvg" />

    <link href="${stylesCss}" rel="stylesheet">
    <link href="${gradientsCss}" rel="stylesheet">
  </head>
  <body class="">
    <div class="wrapper">
      <div class="graphics">
        <div class="tower">
          <svg version="1.1" id="Layer_1" xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/xlink" x="0px"
            <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M989,595H712v-35c0,0,4.5
            <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M8,393.7c0-13.5,12.1-10.
            <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M325.1,313.9c-3.9,3-3.9,
            <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M18.4,229.5c0-13.5,12.1-
            <path class="path" fill="none" stroke="#FFFFFF" stroke-width="2" stroke-miterlimit="10" d="M215.8,398.8c0-13.5,12.1
          </svg>
        </div>
      </div>
```

The necessary changes are made in the index page and commit the changes



Commit changes to master

File: Java-App/src/main/webapp/WEB-INF/views/index.jsp

Author name

lkm-author

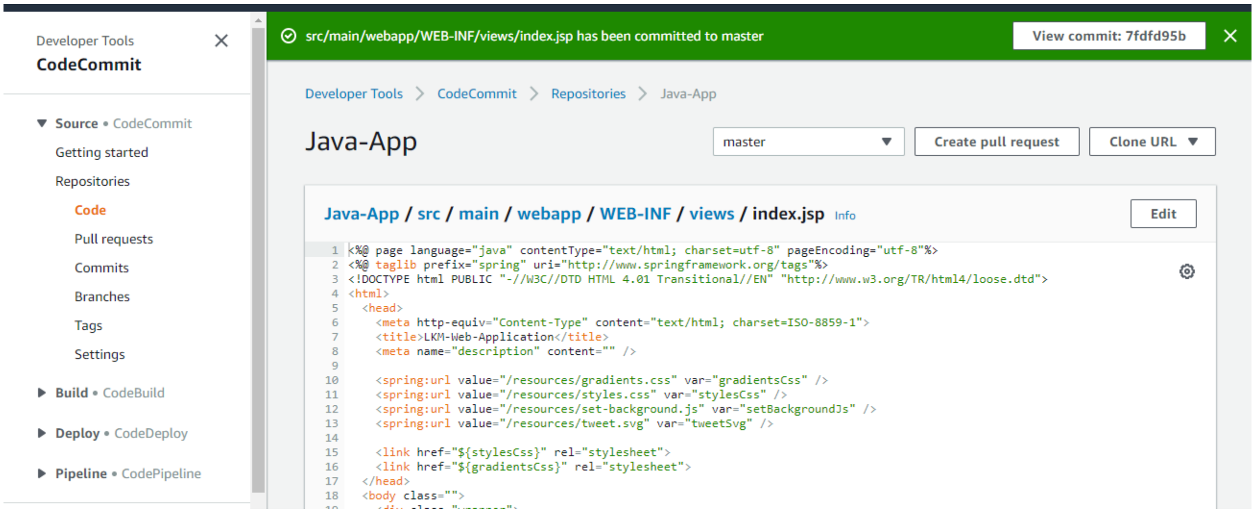
Email address

yuvaraj.ravikumar@accenture.com

Commit message - *optional*

A default commit message will be used if you do not provide one.

This is the new commit as per the new standards of security



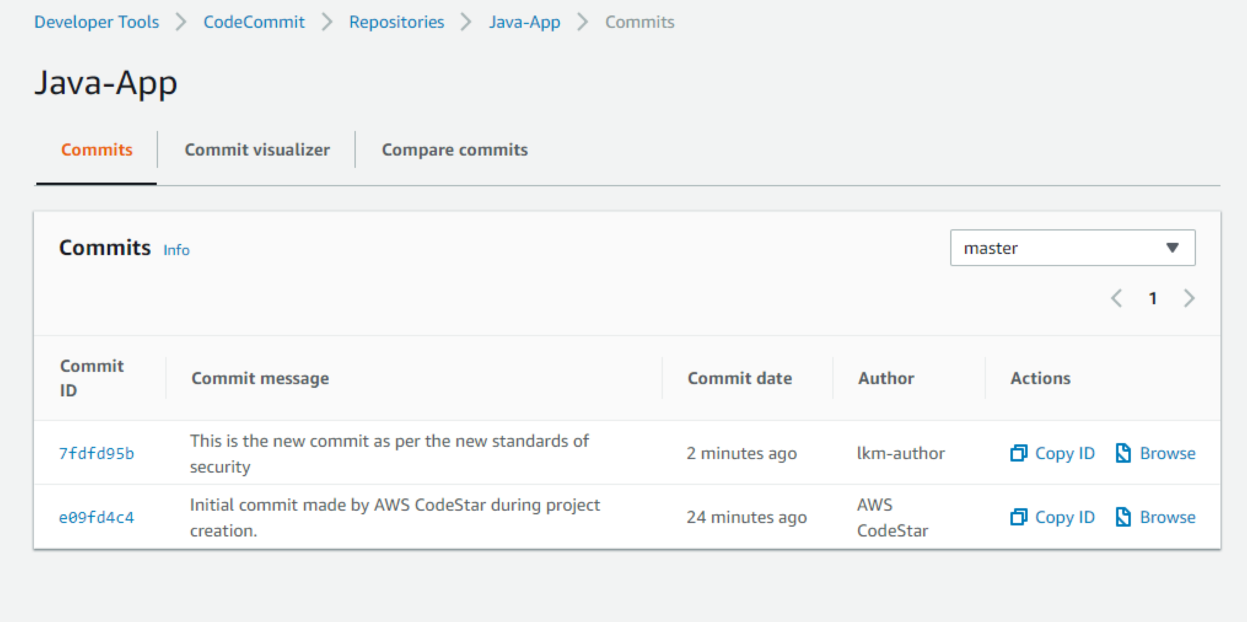
src/main/webapp/WEB-INF/views/index.jsp has been committed to master

Java-App

Java-App / src / main / webapp / WEB-INF / views / index.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8"%>
<%@ taglib prefix="spring" uri="http://www.springframework.org/tags"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>LKM-Web-Application</title>
    <meta name="description" content="" />

    <spring:url value="/resources/gradients.css" var="gradientsCss" />
    <spring:url value="/resources/styles.css" var="stylesCss" />
    <spring:url value="/resources/set-background.js" var="setBackgroundJs" />
    <spring:url value="/resources/tweet.svg" var="tweetSvg" />

    <link href="${stylesCss}" rel="stylesheet">
    <link href="${gradientsCss}" rel="stylesheet">
  </head>
  <body class="">
```

Commit changes will take care of continuous integration and deployment automatically, let's see the update in the application


Developer Tools > CodeCommit > Repositories > Java-App > Commits

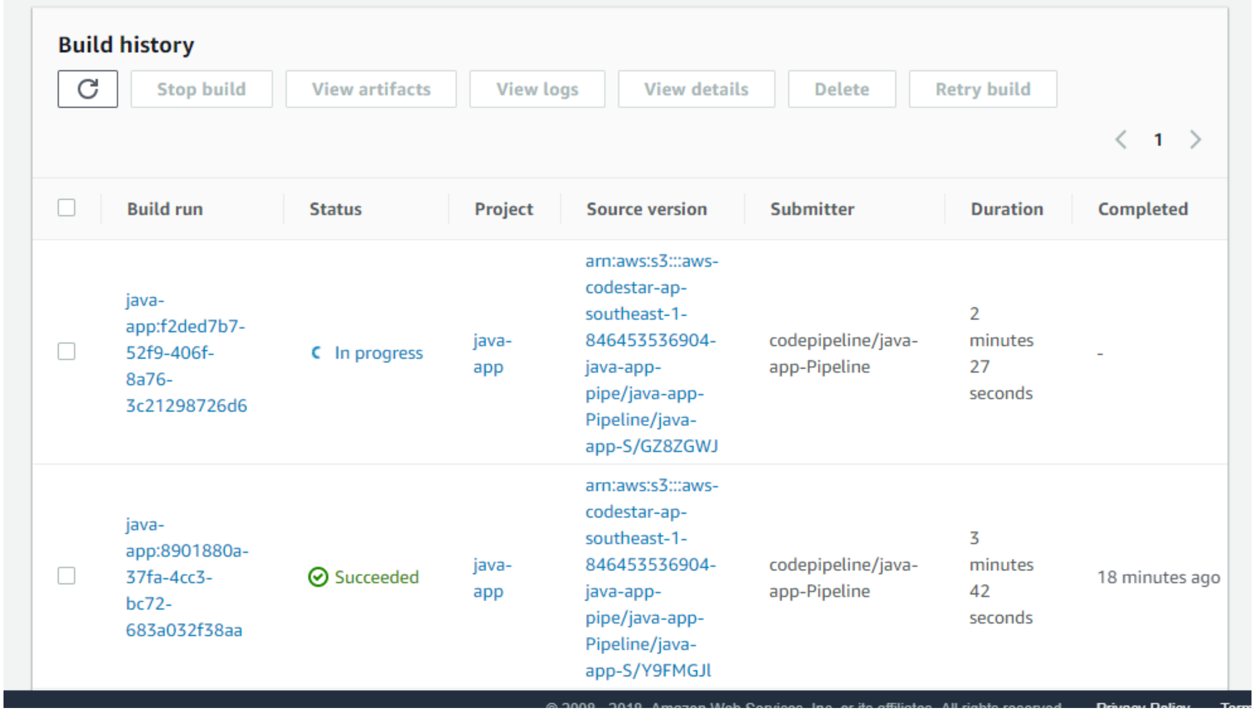
Java-App

Commits
Commit visualizer
Compare commits

Commits Info

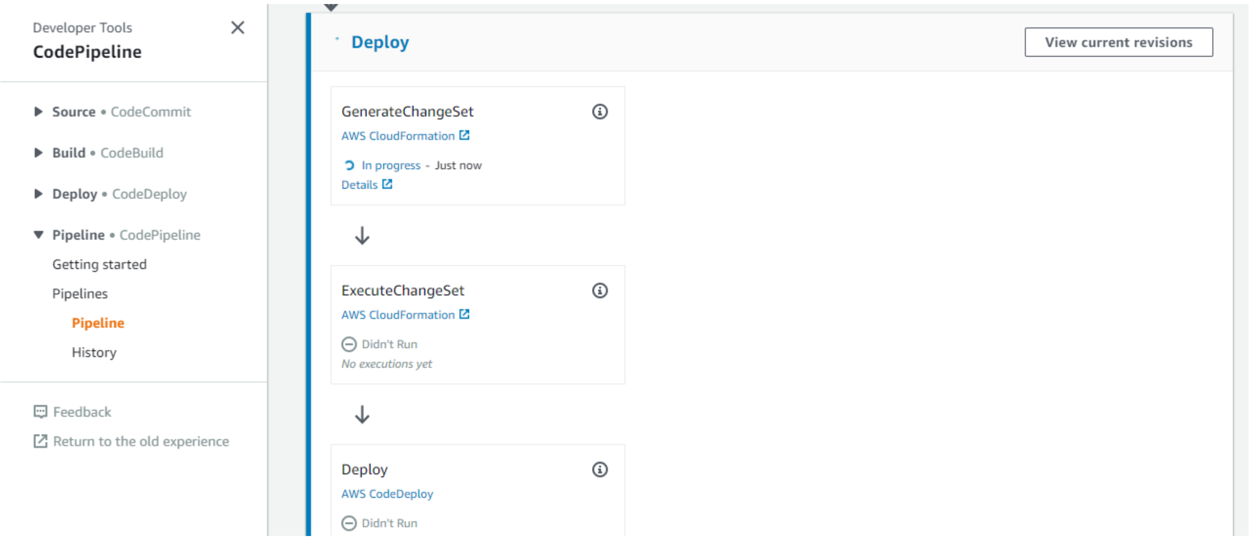
Commit ID	Commit message	Commit date	Author	Actions
7fdfd95b	This is the new commit as per the new standards of security	2 minutes ago	lkm-author	Copy ID Browse
e09fd4c4	Initial commit made by AWS CodeStar during project creation.	24 minutes ago	AWS CodeStar	Copy ID Browse

Here once the commit is done build is happening automatically


Build history

□	Build run	Status	Project	Source version	Submitter	Duration	Completed
□	java-app:f2ded7b7-52f9-406f-8a76-3c21298726d6	In progress	java-app	arn:aws:s3:::aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-Pipeline/java-app-S/GZ8ZGWJ	codepipeline/java-app-Pipeline	2 minutes 27 seconds	-
□	java-app:8901880a-37fa-4cc3-bc72-683a032f38aa	✓ Succeeded	java-app	arn:aws:s3:::aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-Pipeline/java-app-S/Y9FMGJl	codepipeline/java-app-Pipeline	3 minutes 42 seconds	18 minutes ago

Once the build is done and then deployment will happen, we can check the same in the Code Pipeline

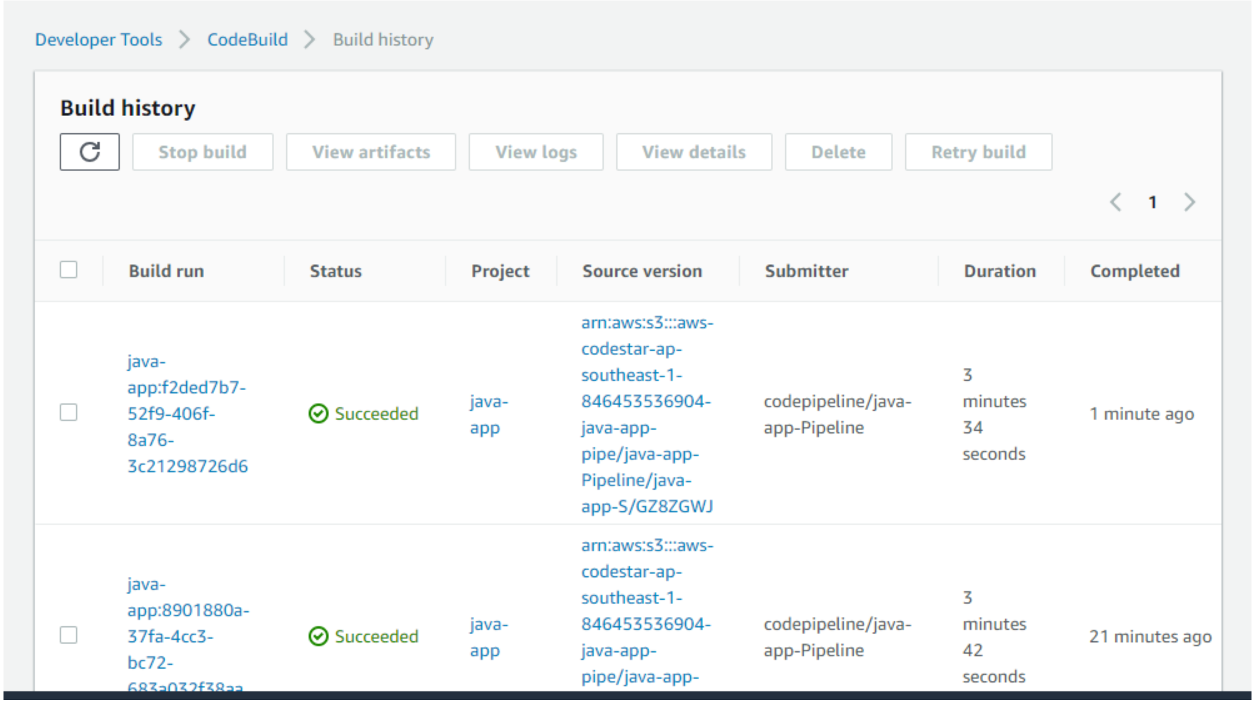


GenerateChangeSet
AWS CloudFormation
In progress - Just now
Details

ExecuteChangeSet
AWS CloudFormation
Didn't Run
No executions yet

Deploy
AWS CodeDeploy
Didn't Run

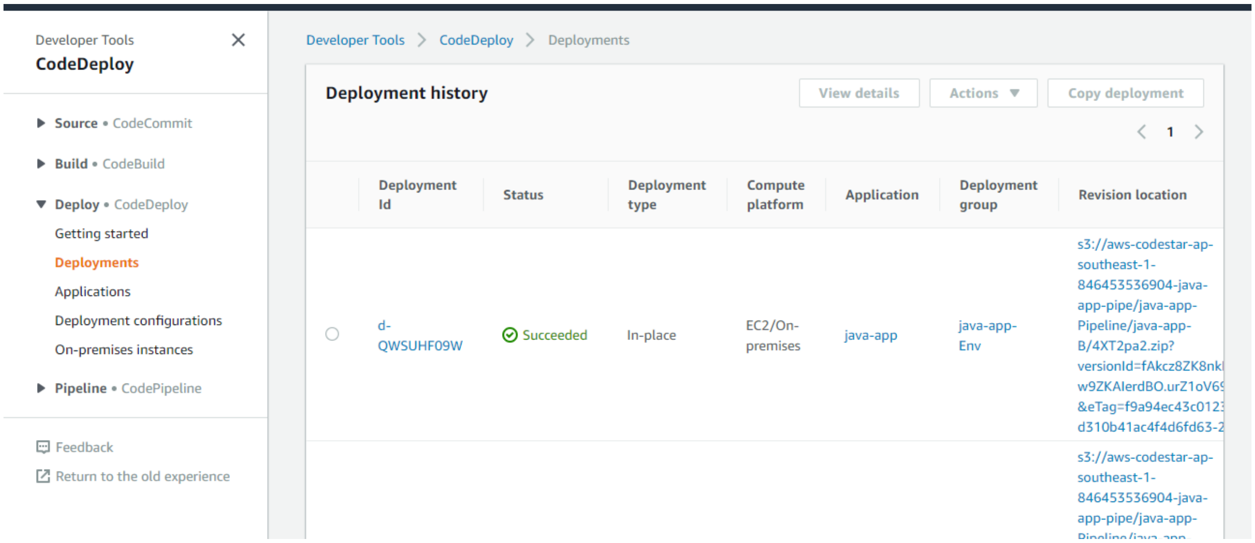
Now the build is successful



Build history

	Build run	Status	Project	Source version	Submitter	Duration	Completed
□	java-app:f2ded7b7-52f9-406f-8a76-3c21298726d6	✓ Succeeded	java-app	arn:aws:s3:::aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-Pipeline/java-app-S/GZ8ZGWJ	codepipeline/java-app-Pipeline	3 minutes 34 seconds	1 minute ago
□	java-app:8901880a-37fa-4cc3-bc72-683a032f38aa	✓ Succeeded	java-app	arn:aws:s3:::aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-	codepipeline/java-app-Pipeline	3 minutes 42 seconds	21 minutes ago

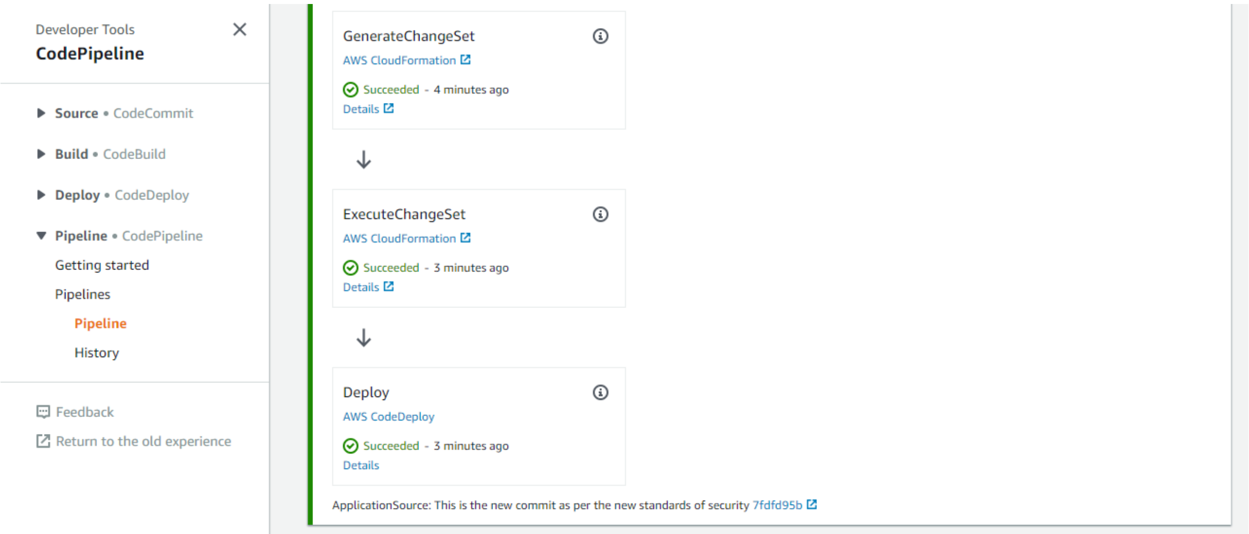
Once the build is done the deployment is also triggered and the deployment is completed successfully



Deployment history

	Deployment Id	Status	Deployment type	Compute platform	Application	Deployment group	Revision location
○	d-QWSUHF09W	✓ Succeeded	In-place	EC2/On-premises	java-app	java-app-Env	s3://aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-Pipeline/java-app-B/4XT2pa2.zip?versionId=fAkcz8ZK8nk w9ZKAIerdBO.urZ1oV69 &eTag=f9a94ec43c0123 d310b41ac4f4d6fd63-2
							s3://aws-codestar-ap-southeast-1-846453536904-java-app-pipe/java-app-Pipeline/java-app

Now the we can check the status of the build and deploy in the pipeline

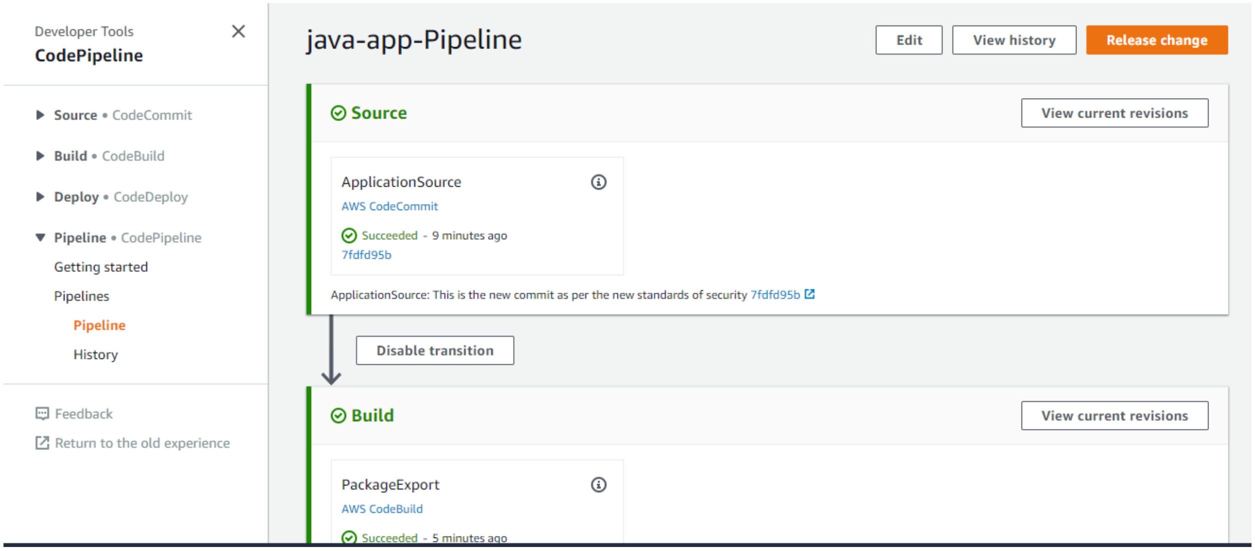


GenerateChangeSet
AWS CloudFormation
✓ Succeeded - 4 minutes ago
Details

ExecuteChangeSet
AWS CloudFormation
✓ Succeeded - 3 minutes ago
Details

Deploy
AWS CodeDeploy
✓ Succeeded - 3 minutes ago
Details

ApplicationSource: This is the new commit as per the new standards of security 7fdfd95b



java-app-Pipeline

✓ Source

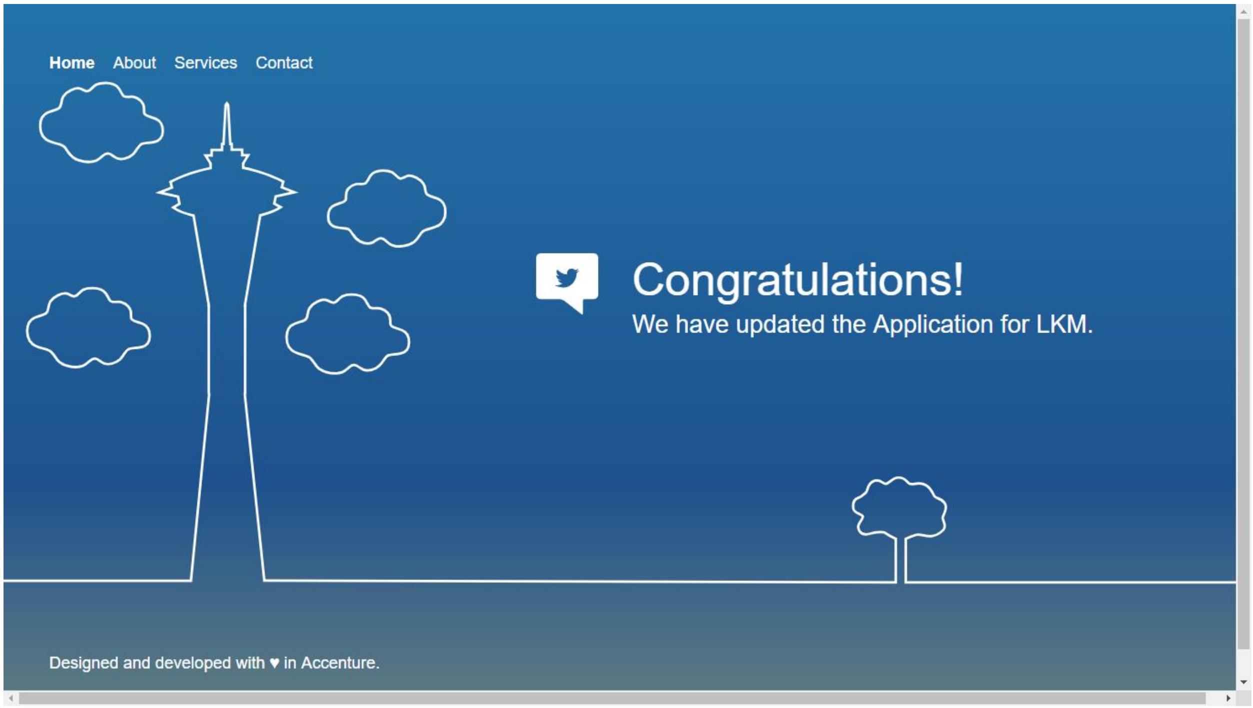
ApplicationSource
AWS CodeCommit
✓ Succeeded - 9 minutes ago
7fdfd95b

ApplicationSource: This is the new commit as per the new standards of security 7fdfd95b

✓ Build

PackageExport
AWS CodeBuild
✓ Succeeded - 5 minutes ago

Now everything is ready, and we can check the same in our web application for the commit changes

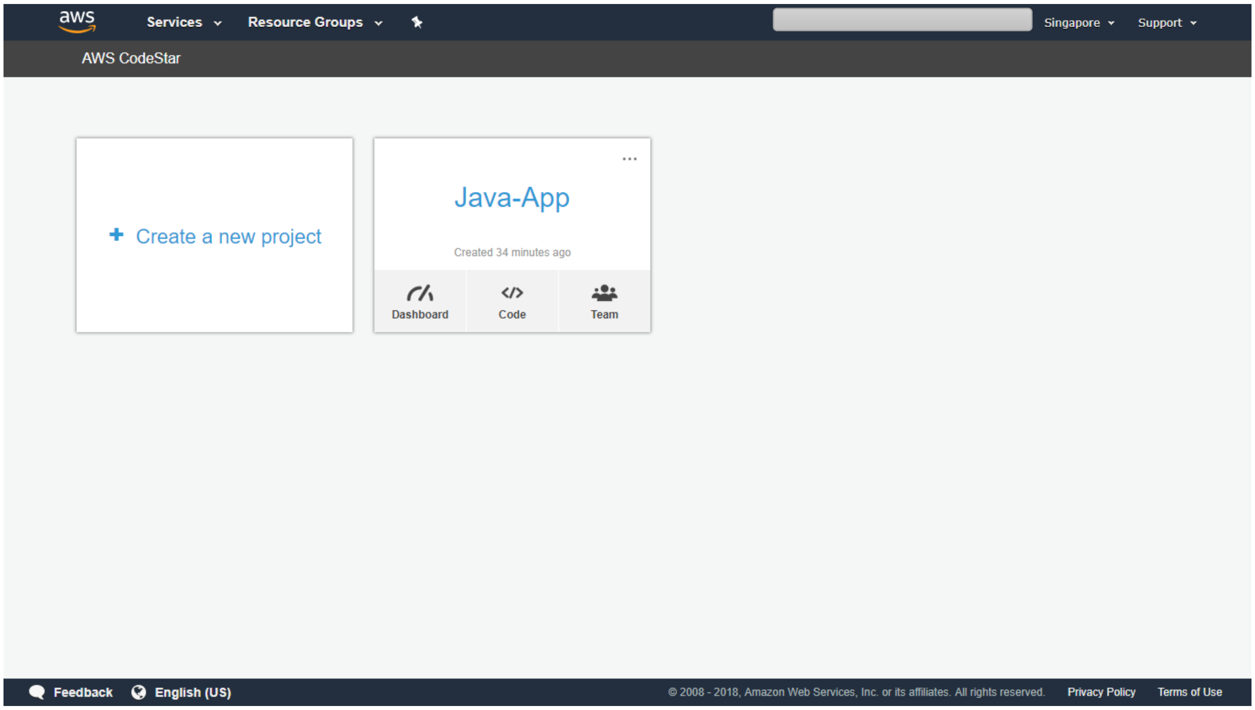


Congratulations!

We have updated the Application for LKM.

Designed and developed with ♥ in Accenture.

Yes, finally all commits are taken care by CI / CD provisioned by AWS.



Once the new commit is deployed the same way the web application is updated with the changes. Code Star will helps the developer to concentrate only on code, integration and deployment are taken care by AWS.

Hope you all uncovering the document accessible and useful.

If you have any demanding question which is mentioned in the document, please feel free to contact us.

Happy Learning

LKM