CONTINUOUS INTEGRATION USING JENKINS AND TOOLS

BACHELOR OF
TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

RGUKT

Rajiv Gandhi University of Knowledge Technologies

R.K.VALLEY

Submitted by

K Balaji Raju

Under the guidance of

Shaik shabana
Assistant Professor CSE
RGUKT RK VALLEY.

DECLARATION

We here by declare that the report of the B.Tech Main Project Work entitled “**Continuous integration using Jenkins and tools**” which is being submitted to Rajiv Gandhi University of Knowledge Technologies, RK Valley in partial full fillment of the requirements for the award of Degree of Bachelor of Technology in Computer Science and Engineering, is a bonafide report of the work .The material contained in this report has not been submitted to any university or institution for award of any degree.

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Dept. Of Computer Science and Engineering.

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES

RGUKT

(A.P.Government Act 18 of
2008) RGUKT, RK VALLEY

Department of Computer Science and Engineering

CERTIFICATE FOR PROJECT COMPLETION

This is certify that the project entitled “**Continuous integration using Jenkins and tools**” submitted by **K Balaji Raju(R170517)** ,under our guidance and supervision for the partial full fillment for the degree Bachelor of Technology in Computer Science and Engineering during the academic semester -2 ,2022-2023 at RGUKT , RK VALLEY. To the best of my knowledge, the results embodied in this dissertation work have not been submitted to any University or Institute for the award of any degree or diploma.

Project Internal Guide	**Head of the Department**
Ms Shaik shabana	Mr. Satyanandaram . N
Assistant Professor	HOD Of CSE
RGUKT, RK Valley	RGUKT, RValley

ACKNOWLEDGMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of the people who made it possible and whose constant guidance and encouragement crown all the efforts success.

I am extremely grateful to our respected Director,Prof. K. SANDHYA RANI for fostering an excellent academic climate in our institution.

I also express my sincere gratitude to our respected Head of the Department Mr. Sathyanadaram.N for his encouragement, overall guidance in viewing this project a good asset and effort in bringing out this project.

I would like to convey thanks to our guide at college Mrs Shaik shabana for his guidance, encouragement, co-operation and kindness during the entire duration of the course and academics.

My sincere thanks to all the members who helped me directly and indirectly in the completion of project work. I express my profound gratitude to all our friends and family members for their encouragement.

INDEX

Abstract

This is a simple DevOps Project where we can contineous intrgration using jenkins and tools.By this project, We can create a Continuous Integration for our code. In this project I used jenkins and tools for continuous integration.All code developers need to build and test their code for the consistence ,if we go with manual testing that will take a lot of time efforts and man power efforts and cost effective also.In this project we developed continuous integration which will automatically build the code and test the code and deploy for each commit to the git. we connect the our git to the jenkin tool. Which will automatically sends(notification) status of the code build (that is failed or successed or deployed)to the user mail for each commit so that user can take appropriate action. Or we can also use slack notification services to know the status of code commit.This pipeline overcome the all (manual build,test,deploy) and these activities goes on automatically. Which will reduce the all human efforts and time and cost too.

Introduction

Continuous integration refers to the build and unit testing stages of the software release process. Every revision that is committed triggers an automated build and test. With continuous delivery, code changes are automatically built, tested, deploy and prepared for a release to production.

Scenario

We are in product development(Agile SDLC). So bunch of developers make regular code changes all code needs to be build and tested.

Current situation

Usually build and release team will do(build and test) job. Or Developers responsibility to merge and integrate in small companies or industries.

Problem

In an agile SDLC, There will be regular/frequent code changes. Developers needs to be depended on build and release team usually to test code and more to the next release cycle. But not so frequently code will be tested. Which accumulates bug and errors in the code.

Developers need to rework to fix these bugs and errors. Which is time consuming process, And teams would be already approaching deadline.

Product owners needs to test the code as fast as it building. But not possible because build and release team doing manual process and also approvals ticketing system place. Which delays the process further.

Solution

1)Build and test for every commit

- Regular build and test for every commit as soon as code changes the code needs to build and tested at the same time. But the process is manual this is not possible.

2)Automated build and test process

- So we need automated build and test and deploy process.

3)Notify for every build status

- Whenever there is a build and test the developers should get notified automatically.

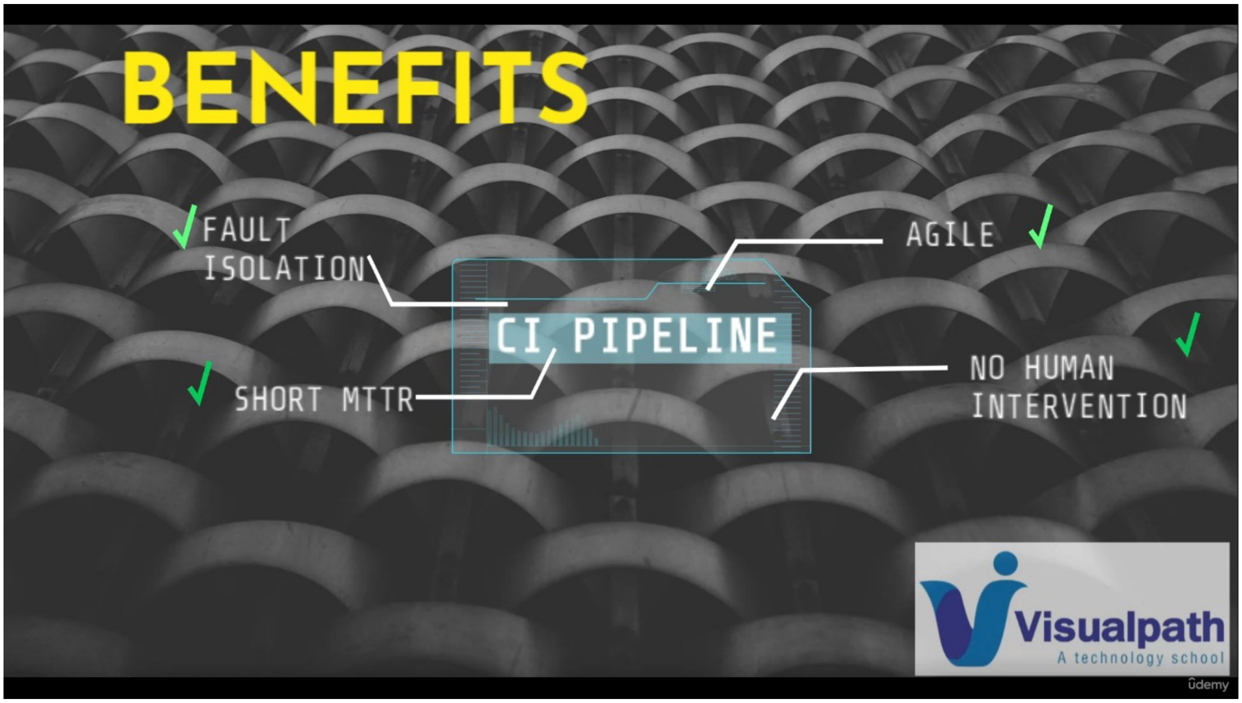
- If there is a build failure, if code is not passing our quality gates, or if there is any bug or any kind of error developers should stop whatever they are doing and first they will fix their code.

4)Fix code if bugs or errors found instantly rather then waiting.

- So if we have such kind of automation framework in-place which will regularly build and test the code for every commit.

- Then we are also removing dependency of developers of build and release team. This process itself called as CI process.

Benefits CI pipeline using jenkins and tools



BENEFITS

FAULT ISOLATION

AGILE

CI PIPELINE

SHORT MTTR

NO HUMAN INTERVENTION

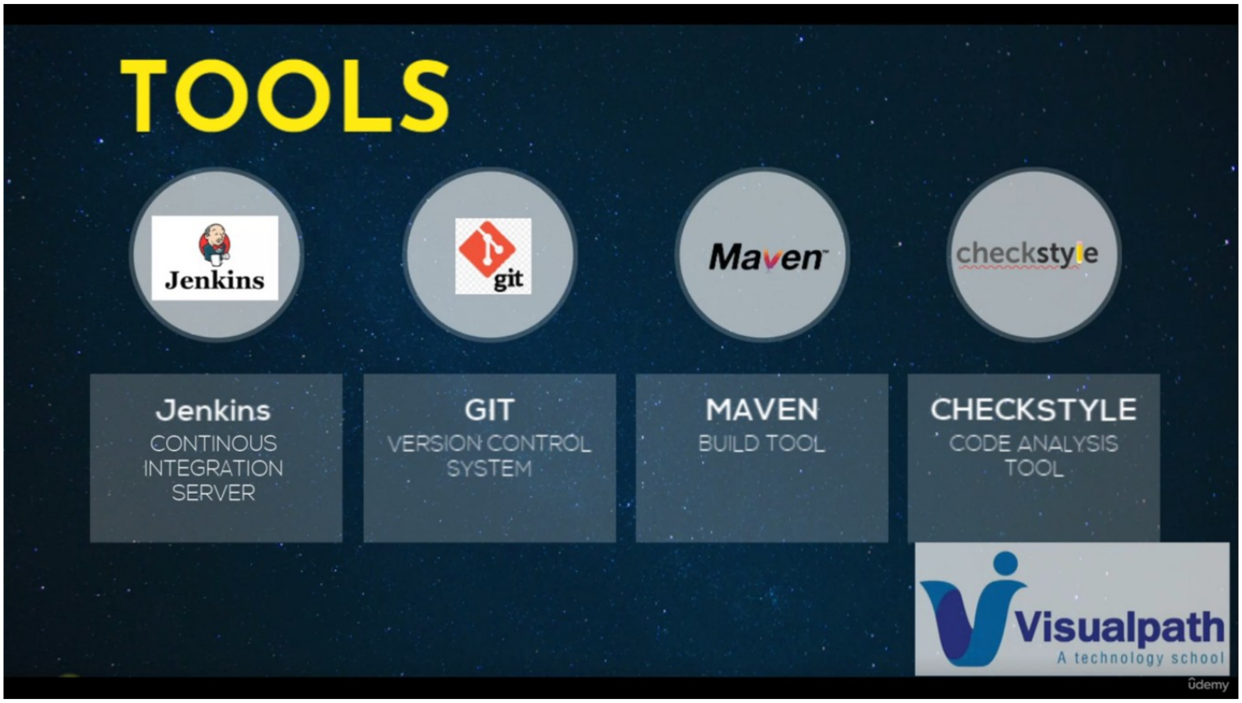
1)short MTTR(mean time to repair)

2)Agile SDLC

3)No human interaction

4)Fault isolation quickly

Tools



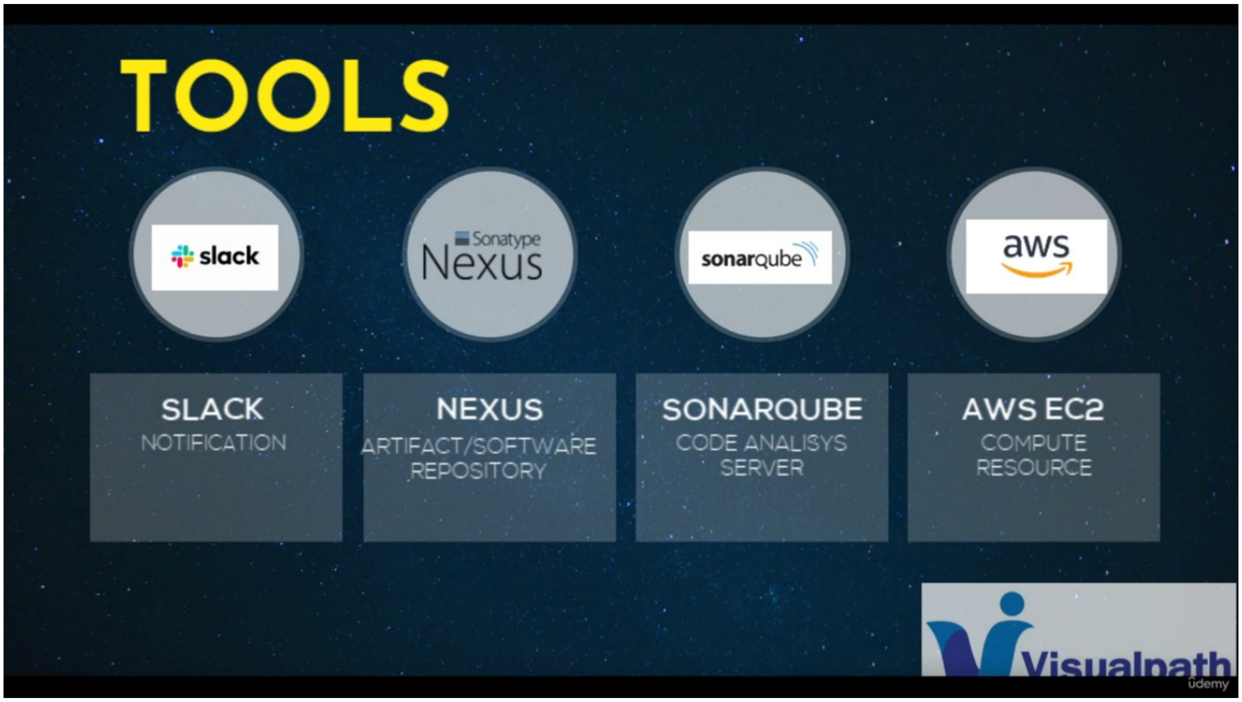
TOOLS

Jenkins
CONTINOUS INTEGRATION SERVER

GIT
VERSION CONTROL SYSTEM

MAVEN
BUILD TOOL

CHECKSTYLE
CODE ANALYSIS TOOL



TOOLS

SLACK
NOTIFICATION

NEXUS
ARTIFACT/SOFTWARE REPOSITORY

SONARQUBE
CODE ANALISYS SERVER

AWS EC2
COMPUTE RESOURCE

1)Jenkins : Its is a Continuous Integration server and main head of this project , Which need some assistance tools.

2)Git : Git and Git hub as the remote repository and have a Java code in that, And to build that Java code , we will need build tool maven. Here Git is a version control system.

3)Maven: Build tool.

4) Checkstyle: Checkstyle code analysis tool.

5)Slack: Slack notification, We can also have email notification we can also get email notification.

6)Nexus: Artifact/Software Repository used to store our artifact and also to download dependency for Maven.

7)SonarQube: Code analysis server with this we are going to scan our code with the cube scanner and check style , and then we are going to publish our result into Sonar cube server Dashboard.

8) AWS EC2:(Elastic Compute Cloud) Computer resource use to set up Jenkins server, nexus server and sonar cube server.

Purpose

- The purpose of this project is implementing continuous integration using Jenkins and tools and AWS service. With the help of this we can achieve automatically build, test and deploy the code.

- The key goals of continuous integration are to find and address bugs quicker, improve software quality, and reduce the time it takes to validate and release new software updates.

Intended Audience

The intended audience will be the developers and they can change their code whenever they want and they can get notified status of their code for every single commit so that they can rectify their mistakes if any.

1 Developers
2 Product Owners

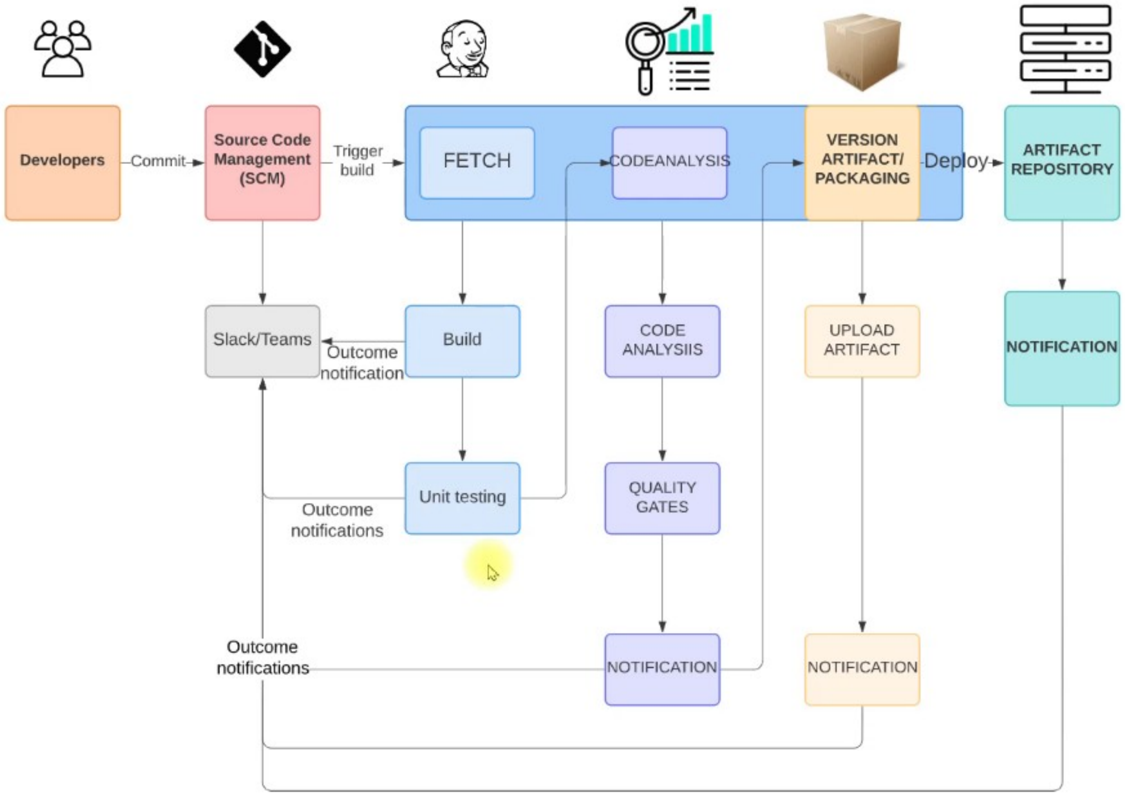
product vision

The project vision is to develop a continuous integration on AWS cloud.

Technologies

1.Devops tools
2.AWS cloud

Architecture



- An automation tool will automatically fetch that code, build it, run a unit test and return the outcome on slack channel.

- The next phase will be run code analysis , in the code analysis there will be quality gates if the threshold is not passing the threshold , if its passing the threshold,then a notification will be sent on slack channel.

- Then it goes to the next level then the software will be built,it will be packaged and the artifact will be uploaded and its outcome notification will be also sent.

- The artifact or the software will be stored into artifact repository. If all these stages are successful, then the software can be promoted to the next level.

- If there is any failure , the notification will be anyways sent. Once the notification is received by the developer for any failure, they will make the code change, they will make the fix and the process repeats again.

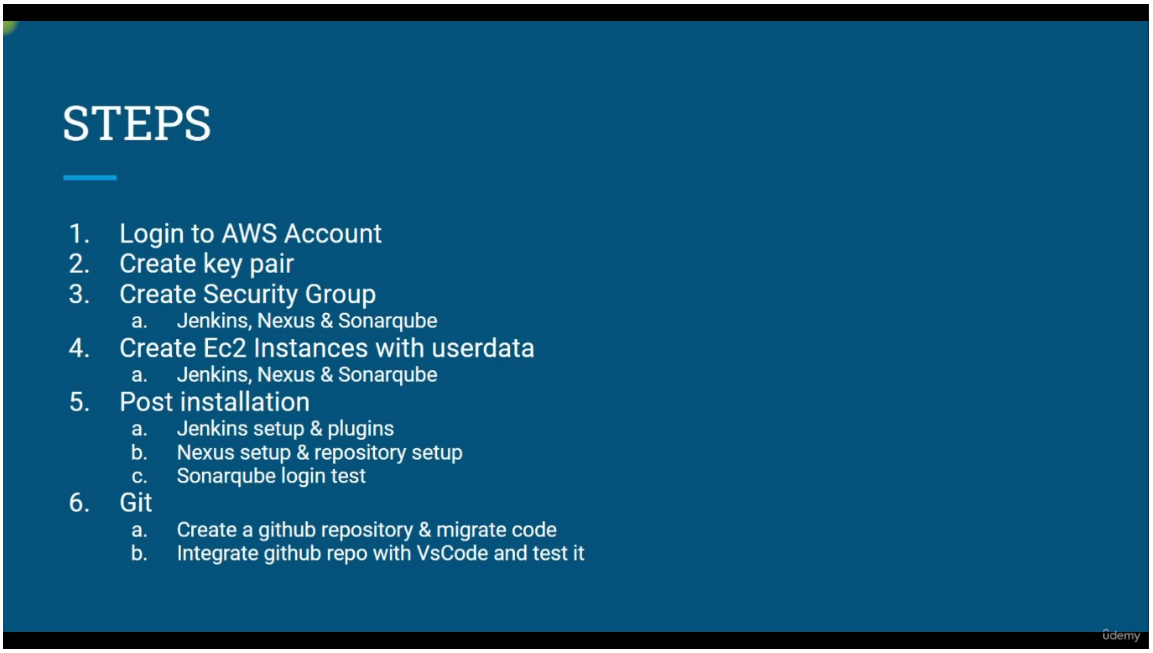
- So there will be a regular code commits, continuous code commits, and this process will run continuously. So that's why the name came to continuous, continuous integration . So this process will be automated. So this can be run multiple times in a day.

- So a developer will make code change by using his or her ID like Visual Studio or Intellij and that tool that ID will be connected to a good repository. So developer makes a code change and commits.

- This commit will be synced with a remote repository will be using GitHub. So as soon as GitHub receive a commit Our continuous integration server Jenkins will detect that and fetch the changes.

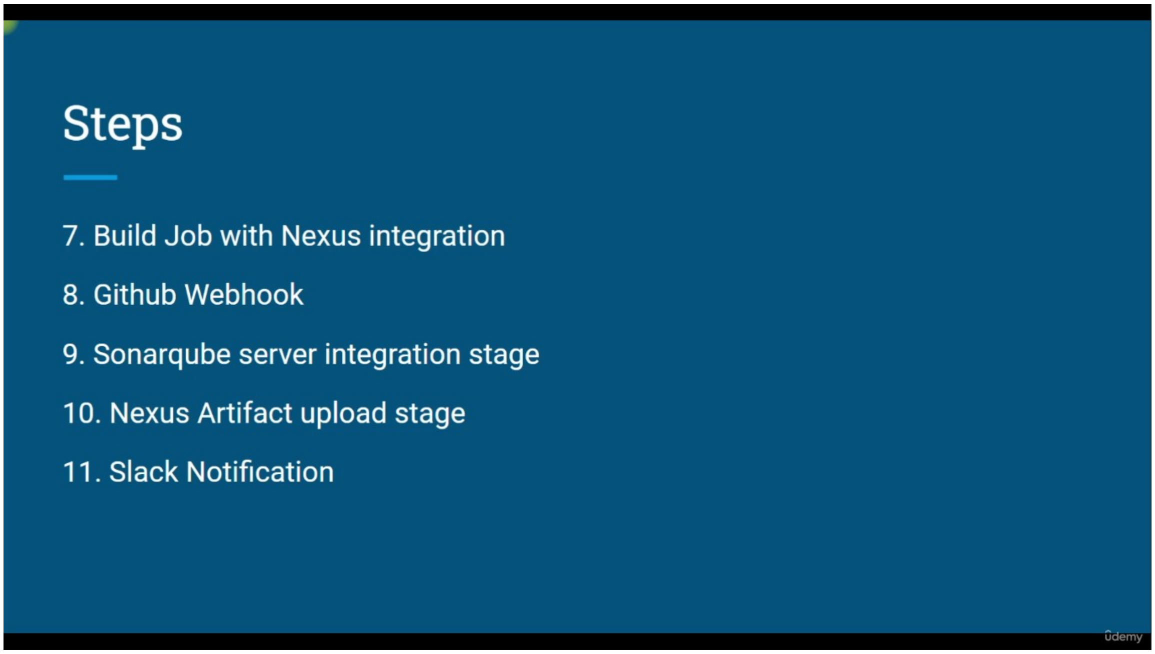
- Fetch the latest code so it will have an integration with GitHub. Then Jenkins will be running some code test(unit test basically). If there is any failure notification will be sent , If it passes code analysis will be done on the code by using textile and a sonar scanner.

Flow of execution



STEPS

1. Login to AWS Account
2. Create key pair
3. Create Security Group
   a. Jenkins, Nexus & Sonarqube
4. Create Ec2 Instances with userdata
   a. Jenkins, Nexus & Sonarqube
5. Post installation
   a. Jenkins setup & plugins
   b. Nexus setup & repository setup
   c. Sonarqube login test
6. Git
   a. Create a github repository & migrate code
   b. Integrate github repo with VsCode and test it



Steps

7. Build Job with Nexus integration

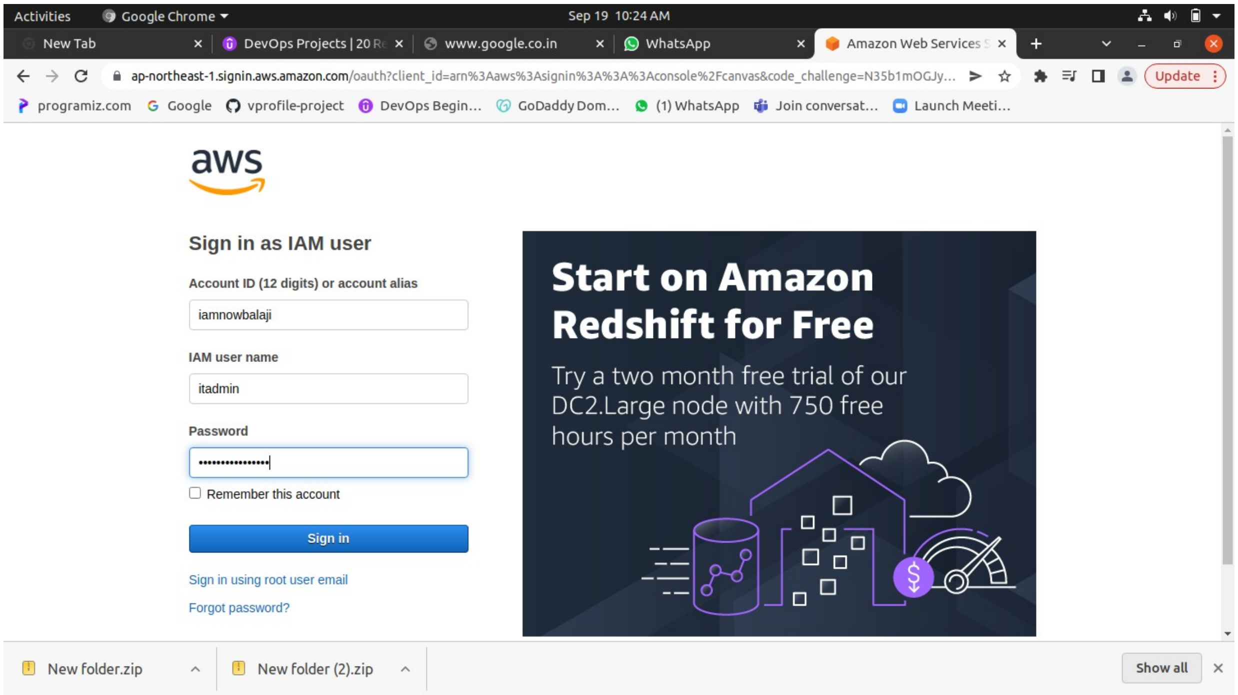
8. Github Webhook

9. Sonarqube server integration stage

10. Nexus Artifact upload stage

11. Slack Notification

1.login into AWS



Sign in as IAM user

Account ID (12 digits) or account alias

iamnowbalaji

IAM user name

itadmin

Password

•••••••••••••••

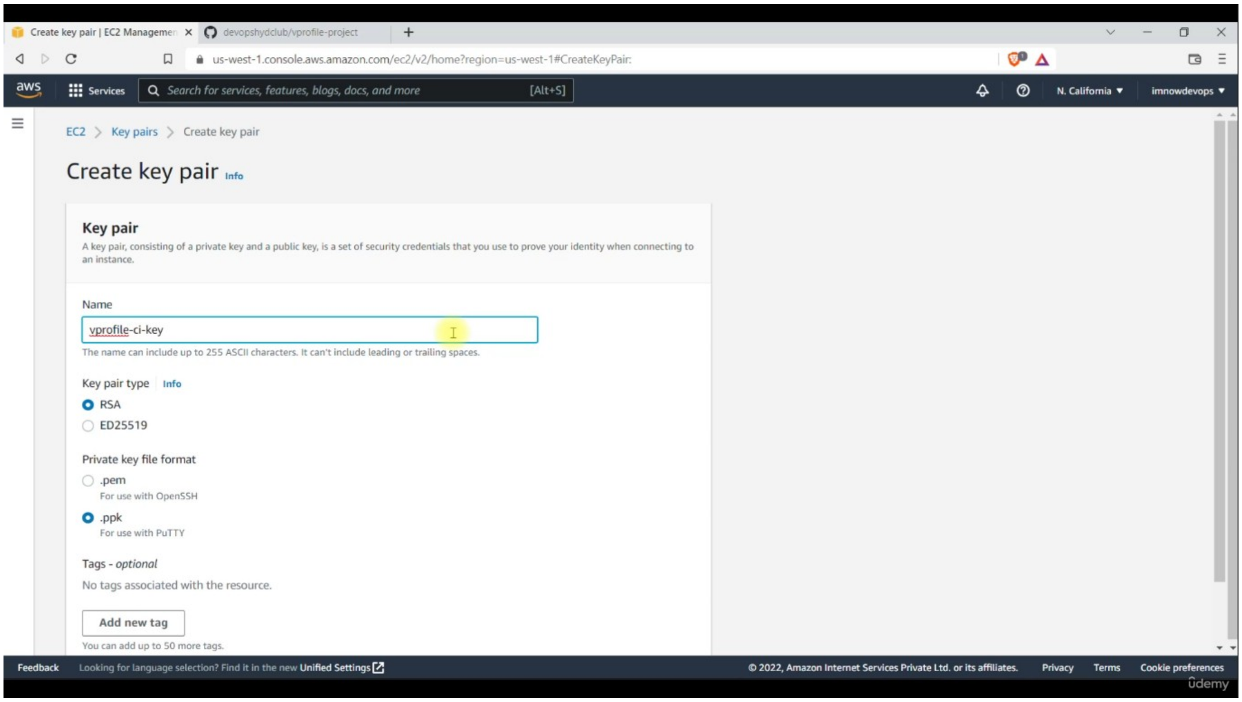
☐ Remember this account

Sign in

Sign in using root user email

Forgot password?

2.Create Key Pairs



EC2 > Key pairs > Create key pair

Create key pair Info

Key pair

A key pair, consisting of a private key and a public key, is a set of security credentials that you use to prove your identity when connecting to an instance.

Name

vprofile-ci-key

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type Info

● RSA

○ ED25519

Private key file format

○ .pem
For use with OpenSSH

● .ppk
For use with PuTTY

Tags - *optional*

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Create key pair | EC2 Managemen
devopshydclub/vprofile-project
us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#CreateKeyPair:
aws
Services
Search for services, features, blogs, docs, and more
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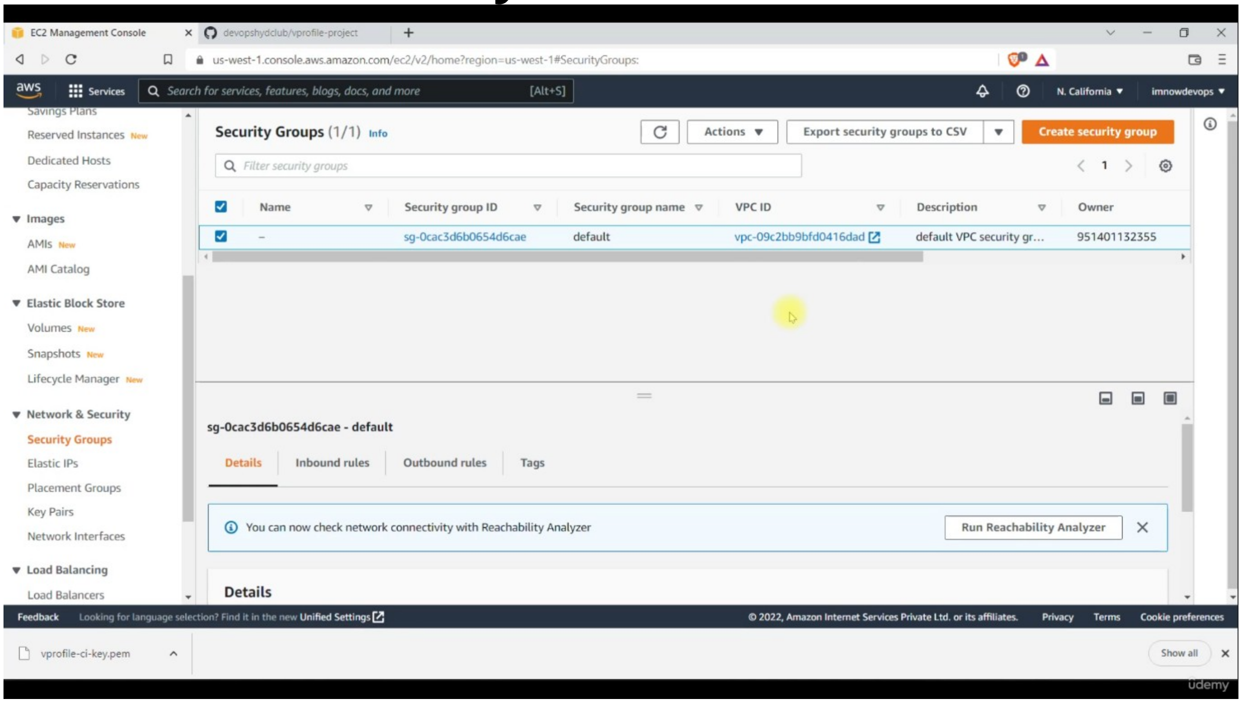
3.Create security Pairs



us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#SecurityGroups:

Security Groups (1/1) Info

Actions ▼ | Export security groups to CSV | Create security group

☑	Name	Security group ID	Security group name	VPC ID	Description	Owner
☑	–	sg-0cac3d6b0654d6cae	default	vpc-09c2bb9bfd0416dad	default VPC security gr...	951401132355

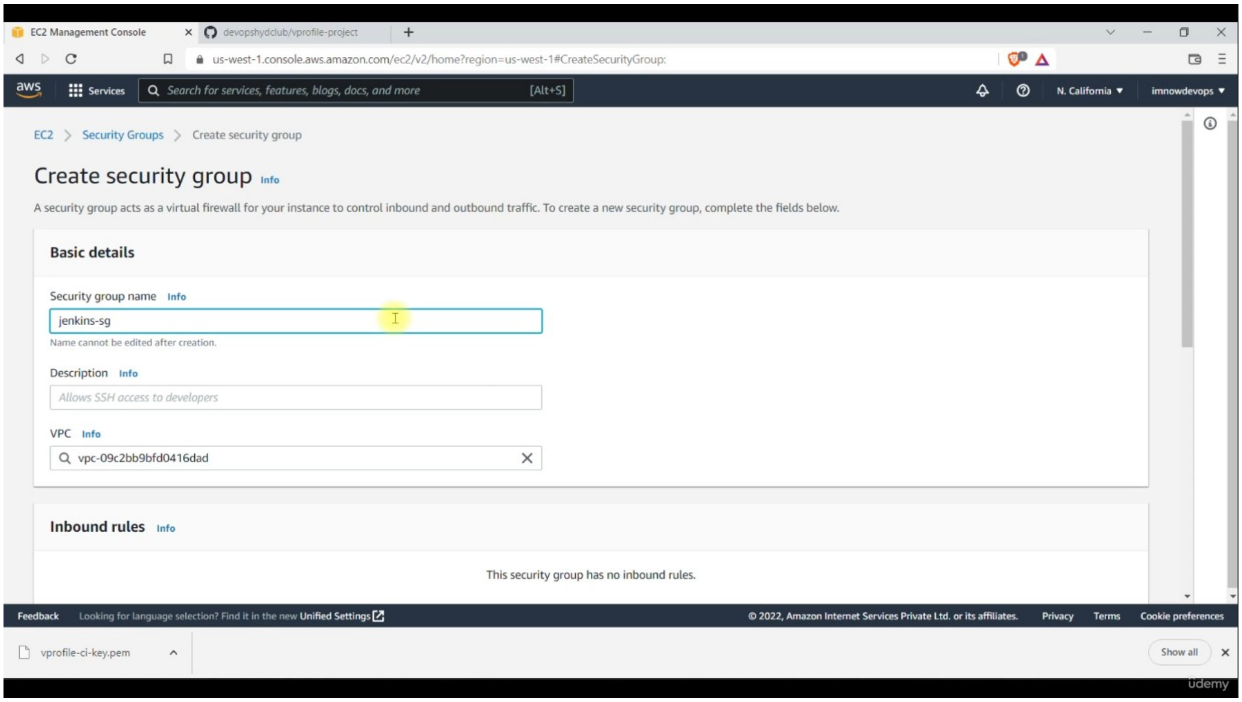
sg-0cac3d6b0654d6cae - default

Details | Inbound rules | Outbound rules | Tags

You can now check network connectivity with Reachability Analyzer — Run Reachability Analyzer

Details

3.1 Jenkis



us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#CreateSecurityGroup:

EC2 > Security Groups > Create security group

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name Info: jenkins-sg

Name cannot be edited after creation.

Description Info: Allows SSH access to developers

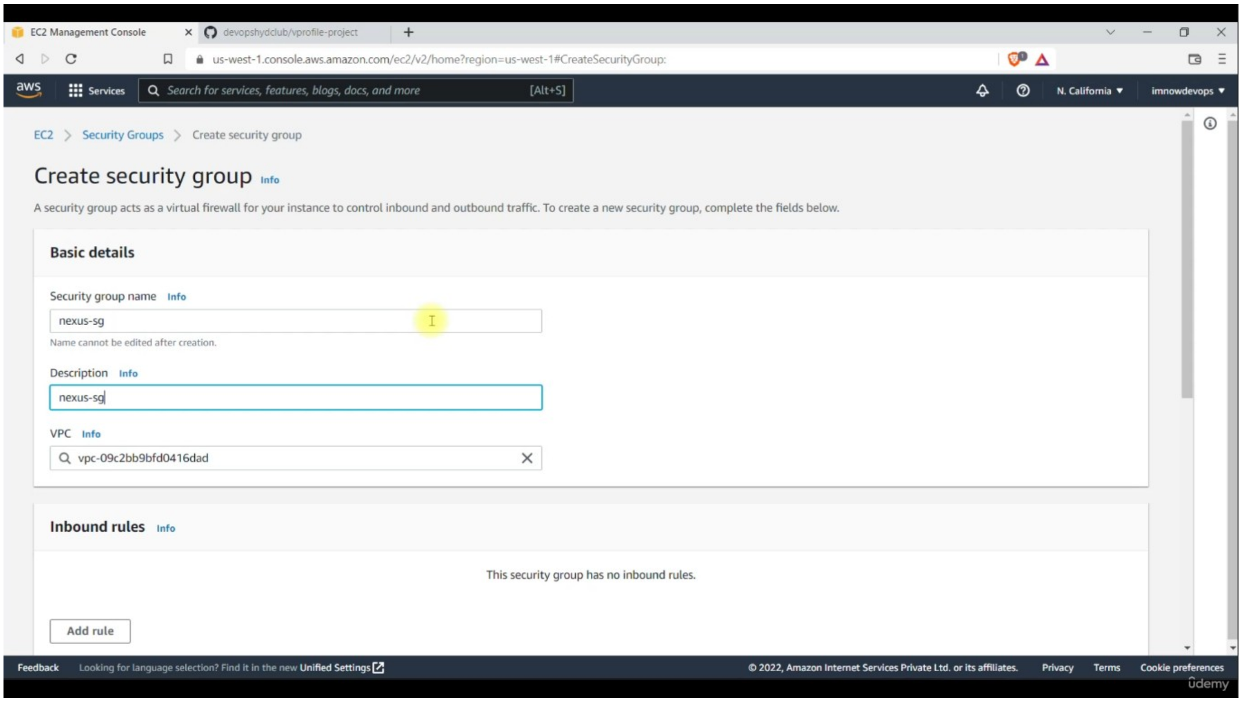
VPC Info: vpc-09c2bb9bfd0416dad

Inbound rules Info

This security group has no inbound rules.

EC2 Management Console
devopshydclub/vprofile-project
Services
Search for services, features, blogs, docs, and more [Alt+S]
N. California ▼
imnowdevops ▼
Feedback
Looking for language selection? Find it in the new Unified Settings
© 2022, Amazon Internet Services Private Ltd. or its affiliates.
Privacy
Terms
Cookie preferences
vprofile-ci-key.pem
Show all
udemy

3.2 Nexus


EC2 Management Console
devopshydclub/vprofile-project
us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#CreateSecurityGroup:
aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. California ▼
imnowdevops ▼
EC2 > Security Groups > Create security group

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name Info: nexus-sg

Name cannot be edited after creation.

Description Info: nexus-sg

VPC Info: vpc-09c2bb9bfd0416dad

Inbound rules Info

This security group has no inbound rules.

Add rule
Feedback
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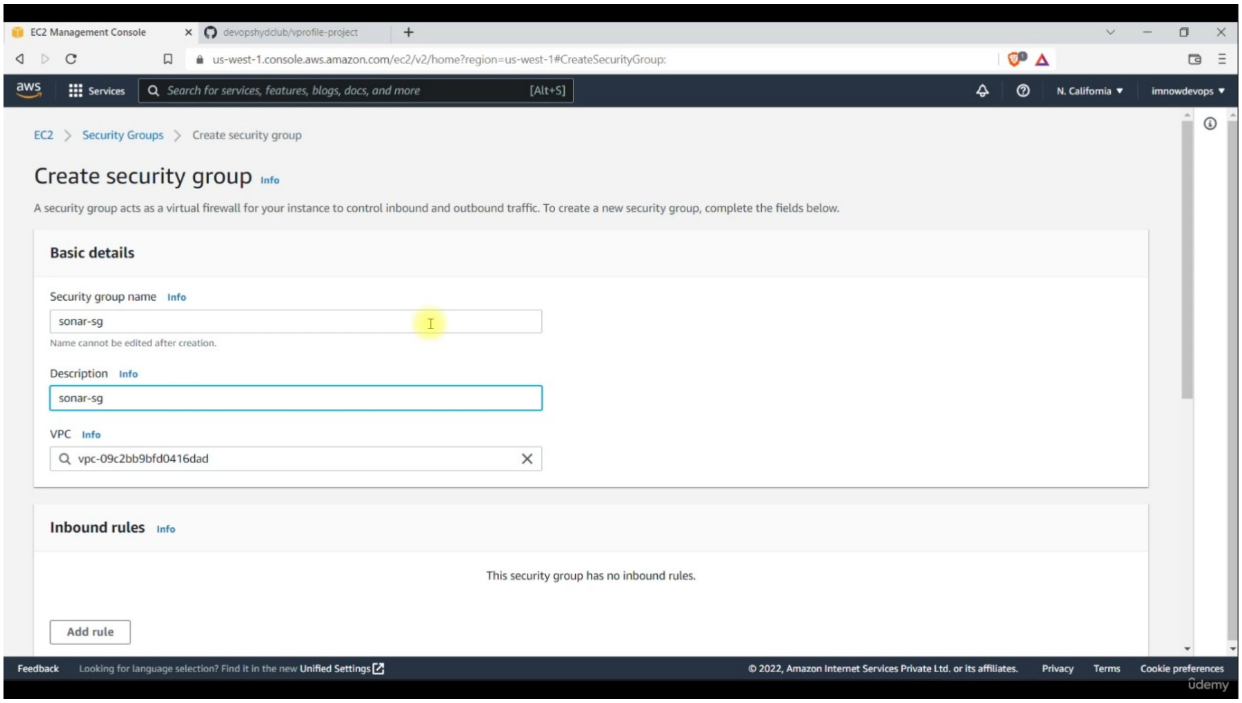
3.3 Sonarqube


EC2 Management Console
devopshydclub/vprofile-project
us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#CreateSecurityGroup:
aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. California ▼
imnowdevops ▼
EC2 > Security Groups > Create security group

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name Info: sonar-sg

Name cannot be edited after creation.

Description Info: sonar-sg

VPC Info: vpc-09c2bb9bfd0416dad

Inbound rules Info

This security group has no inbound rules.

Add rule
Feedback
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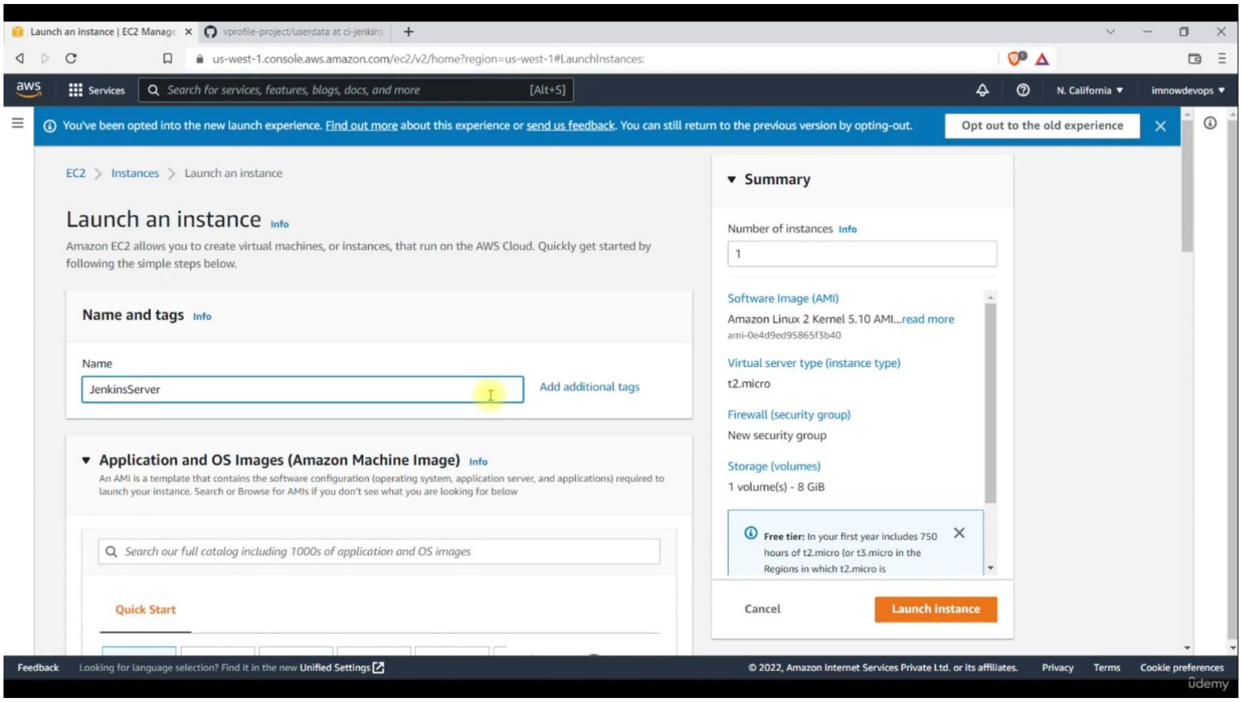
4.Create Ec2 Instance

4.1 Jenkis



Launch an instance | EC2 Manage × | vprofile-project/userdata at ci-jenkins

us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstances:

Services | Search for services, features, blogs, docs, and more [Alt+S] | N. California ▼ | imnowdevops ▼

You've been opted into the new launch experience. Find out more about this experience or send us feedback. You can still return to the previous version by opting-out. Opt out to the old experience

EC2 > Instances > Launch an instance

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name: JenkinsServer — Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Quick Start

▼ Summary

Number of instances Info: 1

Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI...read more — ami-0e4d9ed95865f3b40

Virtual server type (instance type): t2.micro

Firewall (security group): New security group

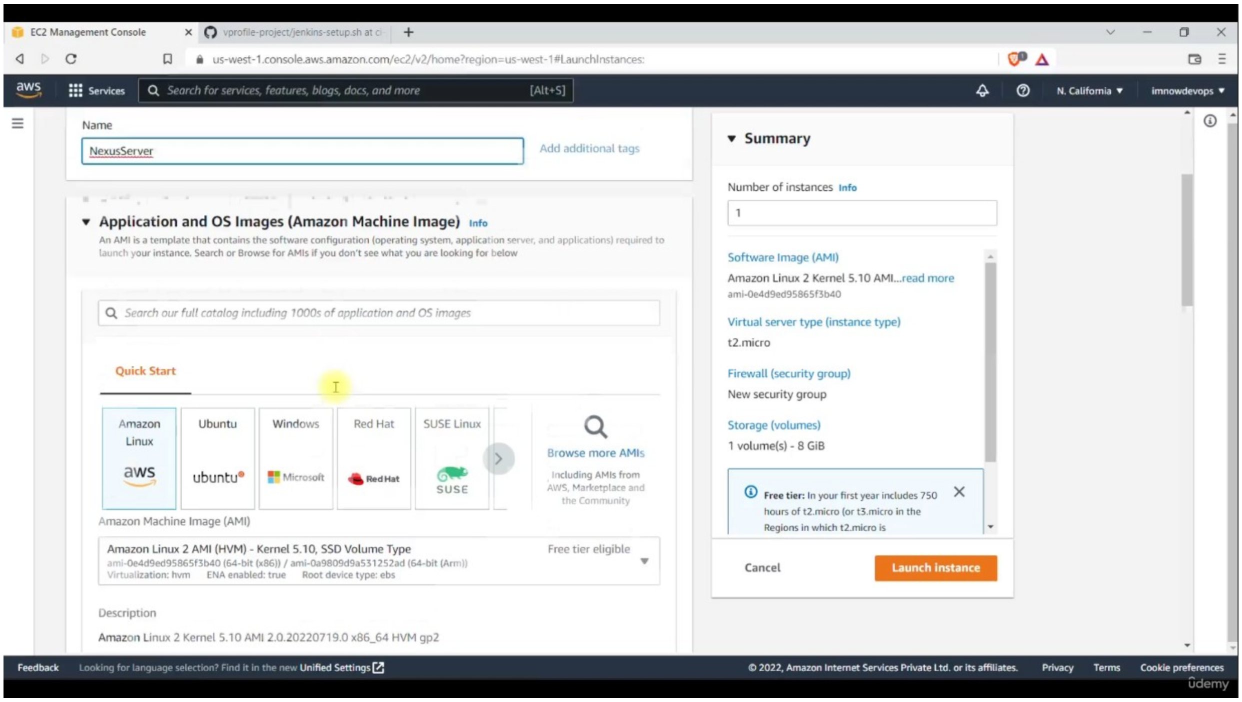
Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is

Cancel | Launch instance

Feedback | Looking for language selection? Find it in the new Unified Settings | © 2022, Amazon Internet Services Private Ltd. or its affiliates. | Privacy | Terms | Cookie preferences

4.2 Nexus



EC2 Management Console × | vprofile-project/jenkins-setup.sh at ci

us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstances:

Services | Search for services, features, blogs, docs, and more [Alt+S] | N. California ▼ | imnowdevops ▼

Name: NexusServer — Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type — Free tier eligible
ami-0e4d9ed95865f3b40 (64-bit (x86)) / ami-0a9809d9a531252ad (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20220719.0 x86_64 HVM gp2

▼ Summary

Number of instances Info: 1

Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI...read more — ami-0e4d9ed95865f3b40

Virtual server type (instance type): t2.micro

Firewall (security group): New security group

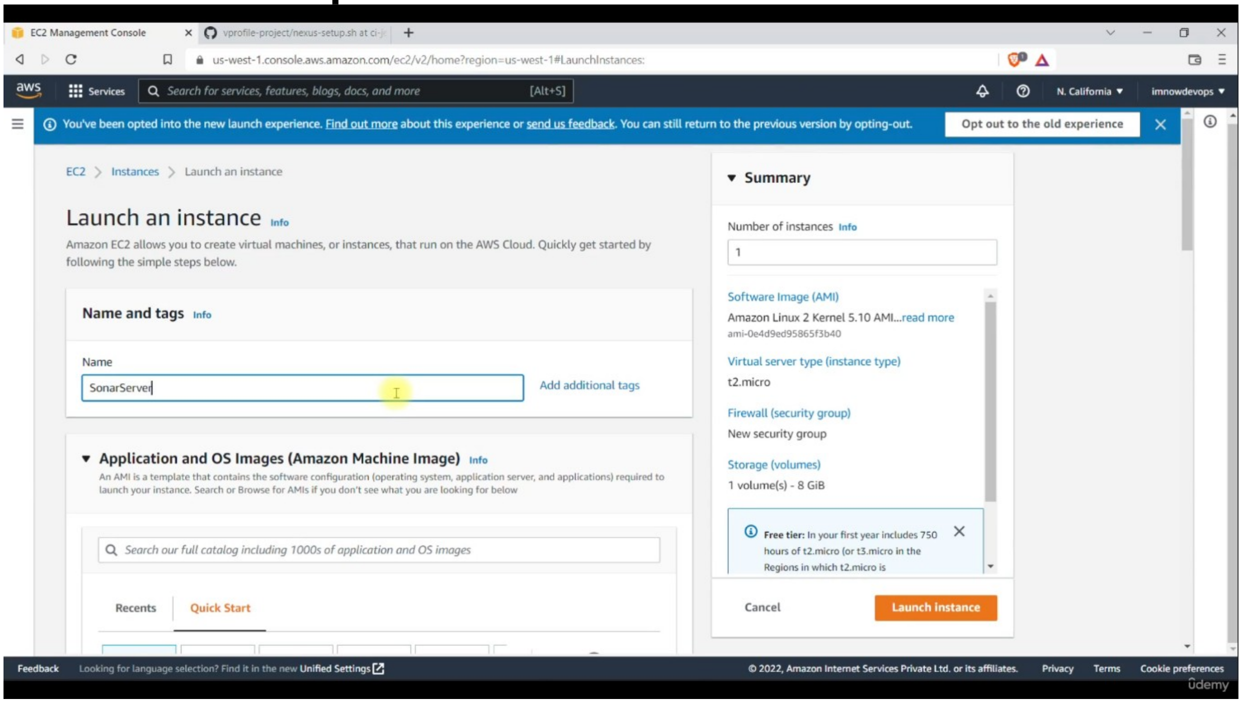
Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is

Cancel | Launch instance

Feedback | Looking for language selection? Find it in the new Unified Settings | © 2022, Amazon Internet Services Private Ltd. or its affiliates. | Privacy | Terms | Cookie preferences

4.3 Sonarqube


EC2 Management Console
vprofile-project/nexus-setup.sh at ci-j
us-west-1.console.aws.amazon.com/ec2/v2/home?region=us-west-1#LaunchInstances:
aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. California ▼
imnowdevops ▼
Opt out to the old experience
EC2 > Instances > Launch an instance
Info
Add additional tags
Recents
Quick Start
Cancel
Launch instance
Feedback
Looking for language selection? Find it in the new Unified Settings
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Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name: SonarServer

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI...read more
ami-0e4d9ed95865f3b40

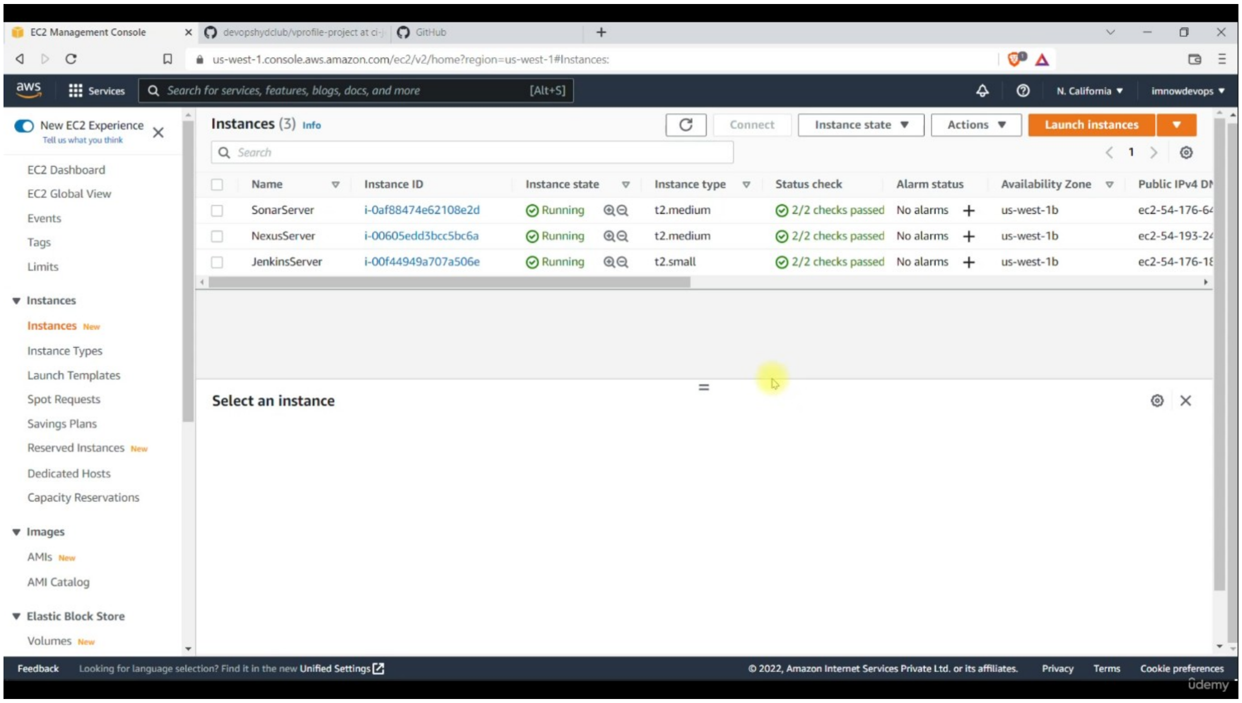
Virtual server type (instance type): t2.micro

Firewall (security group): New security group

Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is

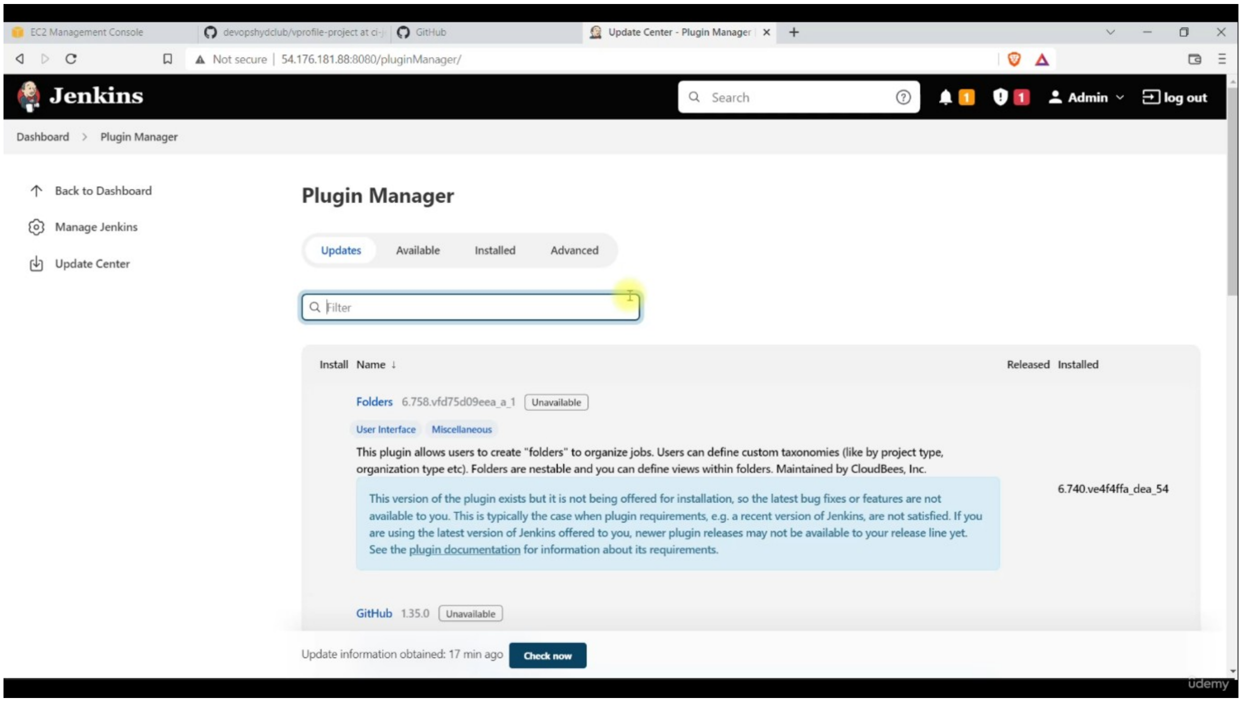
5.Post installation



Instances (3)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DN
SonarServer	i-0af88474e62108e2d	Running	t2.medium	2/2 checks passed	No alarms	us-west-1b	ec2-54-176-64
NexusServer	i-00605edd3bcc5bc6a	Running	t2.medium	2/2 checks passed	No alarms	us-west-1b	ec2-54-193-24
JenkinsServer	i-00f44949a707a506e	Running	t2.small	2/2 checks passed	No alarms	us-west-1b	ec2-54-176-18

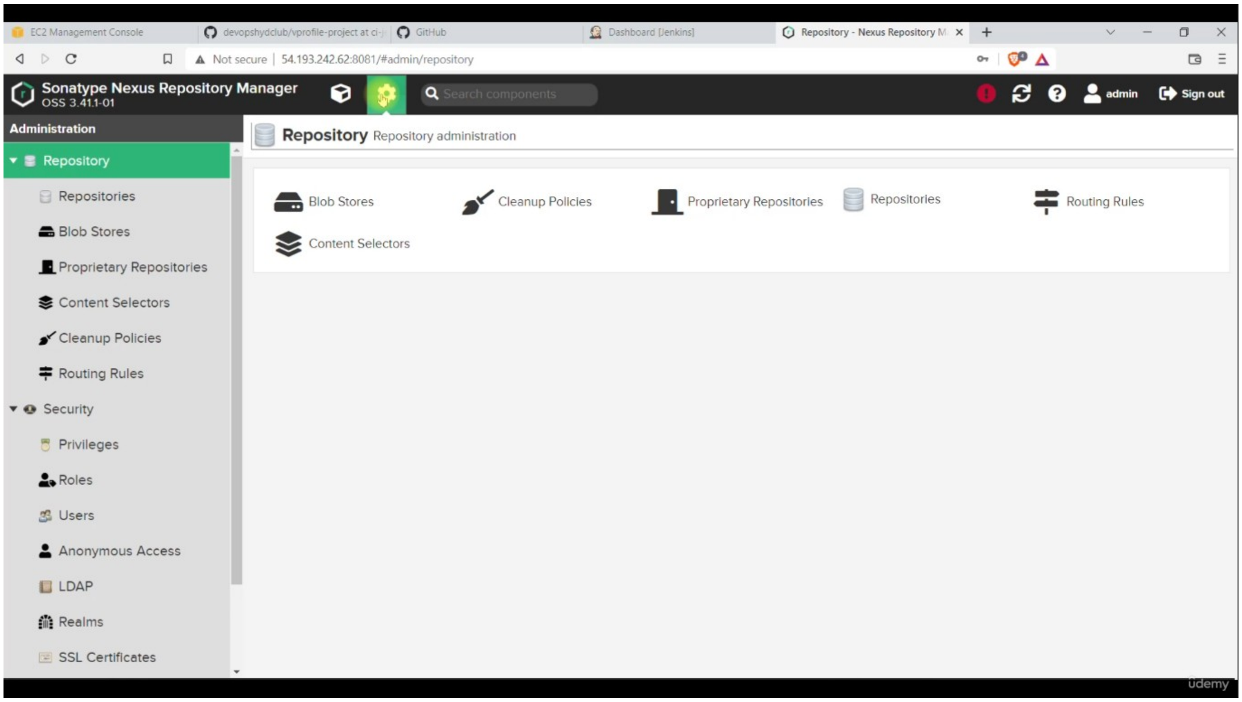
5.1 Jenkins setup



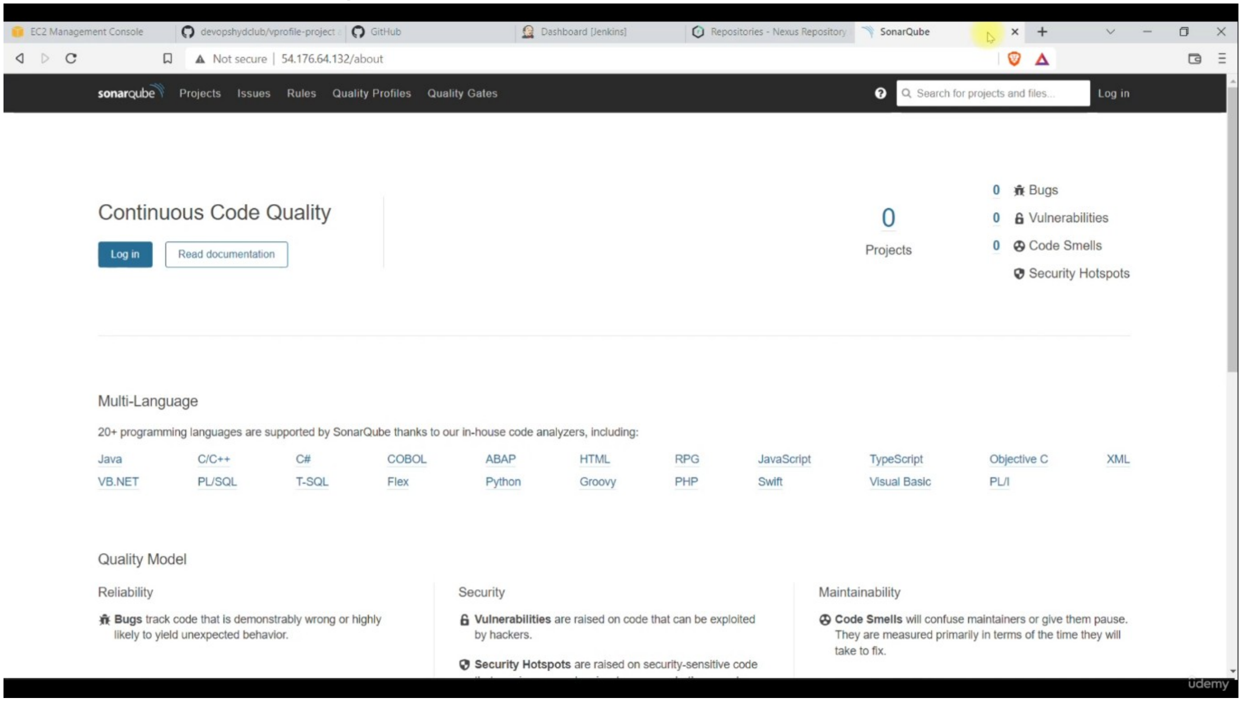
Install	Name ↓	Released	Installed
	Folders 6.758.vfd75d09eea_a_1 Unavailable User Interface Miscellaneous This plugin allows users to create "folders" to organize jobs. Users can define custom taxonomies (like by project type, organization type etc). Folders are nestable and you can define views within folders. Maintained by CloudBees, Inc. This version of the plugin exists but it is not being offered for installation, so the latest bug fixes or features are not available to you. This is typically the case when plugin requirements, e.g. a recent version of Jenkins, are not satisfied. If you are using the latest version of Jenkins offered to you, newer plugin releases may not be available to your release line yet. See the plugin documentation for information about its requirements.		6.740.ve4f4ffa_dea_54
	GitHub 1.35.0 Unavailable		

Update information obtained: 17 min ago **Check now**

5.2 Nexus Setup



5.3 SonarQube


EC2 Management Console
devopshydclub/vprofile-project
GitHub
Dashboard [Jenkins]
Repositories - Nexus Repository
SonarQube
Not secure | 54.176.64.132/about
sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Search for projects and files...
Log in
udemy

Continuous Code Quality

Log in | Read documentation

0 Projects

0 Bugs
0 Vulnerabilities
0 Code Smells
Security Hotspots

Multi-Language

20+ programming languages are supported by SonarQube thanks to our in-house code analyzers, including:

Java	C/C++	C#	COBOL	ABAP	HTML	RPG	JavaScript	TypeScript	Objective C	XML
VB.NET	PL/SQL	T-SQL	Flex	Python	Groovy	PHP	Swift	Visual Basic	PL/I	

Quality Model

Reliability

Bugs track code that is demonstrably wrong or highly likely to yield unexpected behavior.

Security

Vulnerabilities are raised on code that can be exploited by hackers.

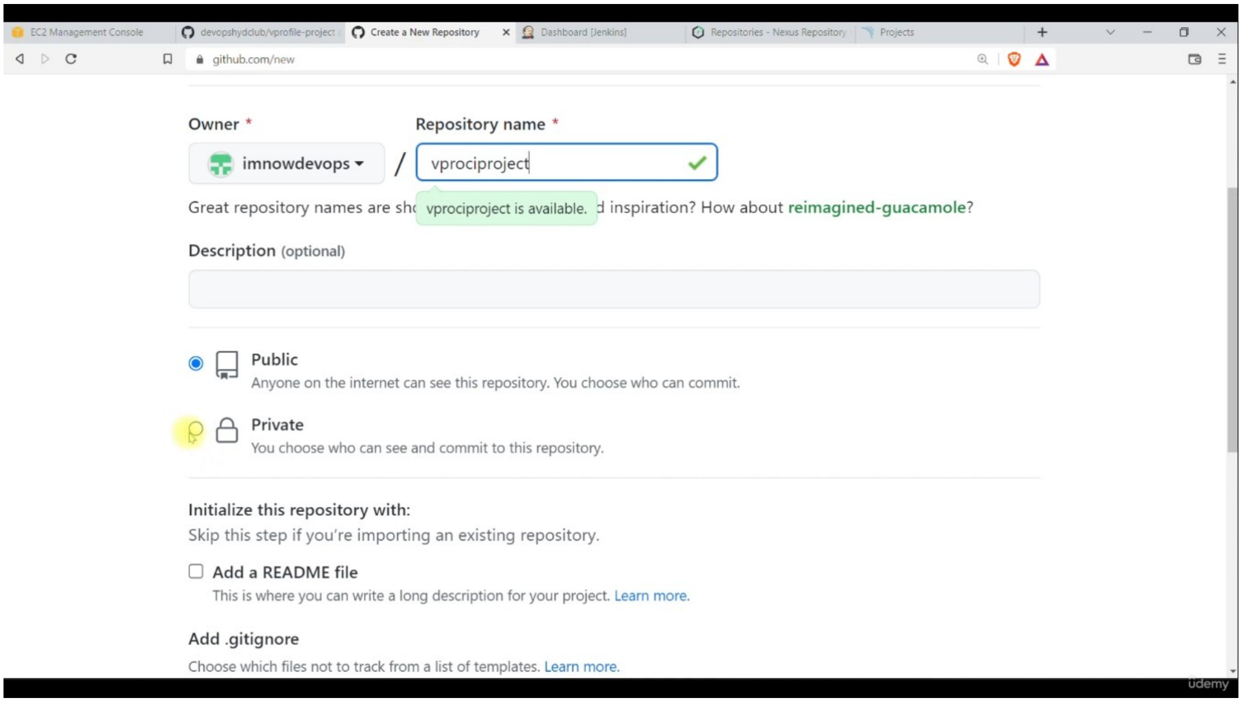
Security Hotspots are raised on security-sensitive code

Maintainability

Code Smells will confuse maintainers or give them pause. They are measured primarily in terms of the time they will take to fix.

6.Git

6.1 Create a github repository & migrate code



Owner * imnowdevops / Repository name * vprociproject

vprociproject is available.

Great repository names are sh… d inspiration? How about **reimagined-guacamole**?

Description (optional)

● Public
Anyone on the internet can see this repository. You choose who can commit.

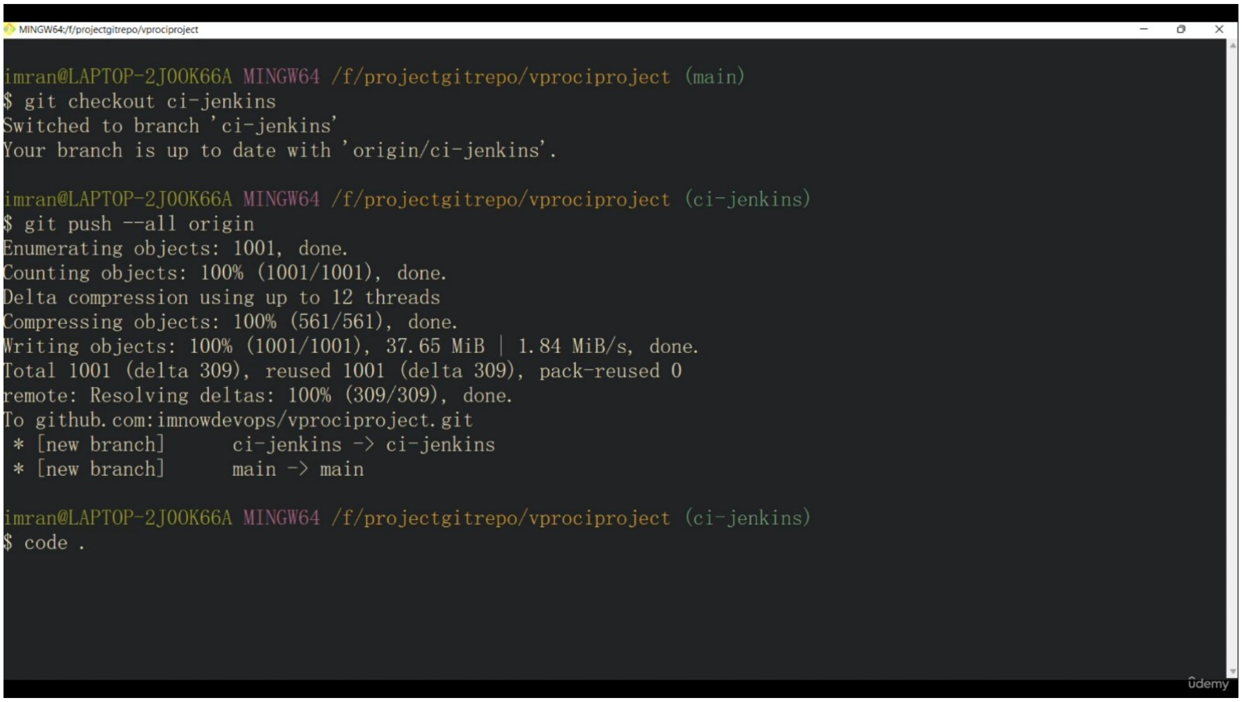
○ Private
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

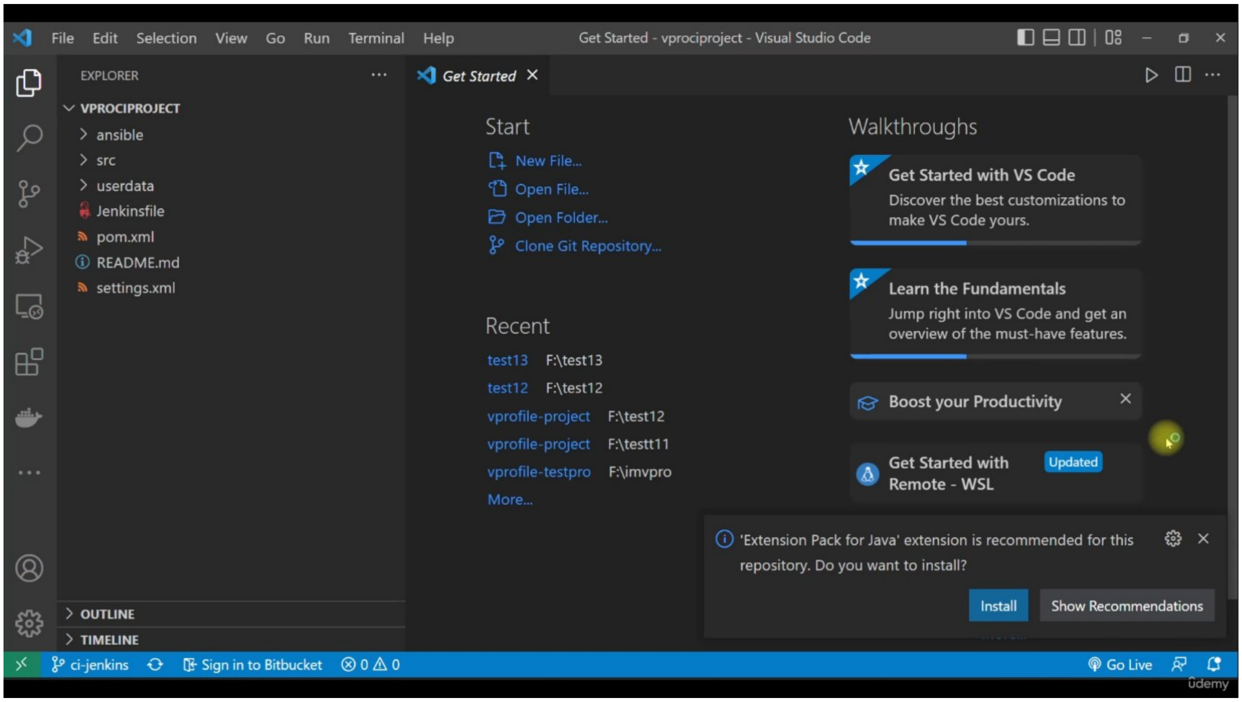
□ Add a README file
This is where you can write a long description for your project. Learn more.

Add .gitignore
Choose which files not to track from a list of templates. Learn more.

6.2 Integrate hithub repo with VsCode and test it



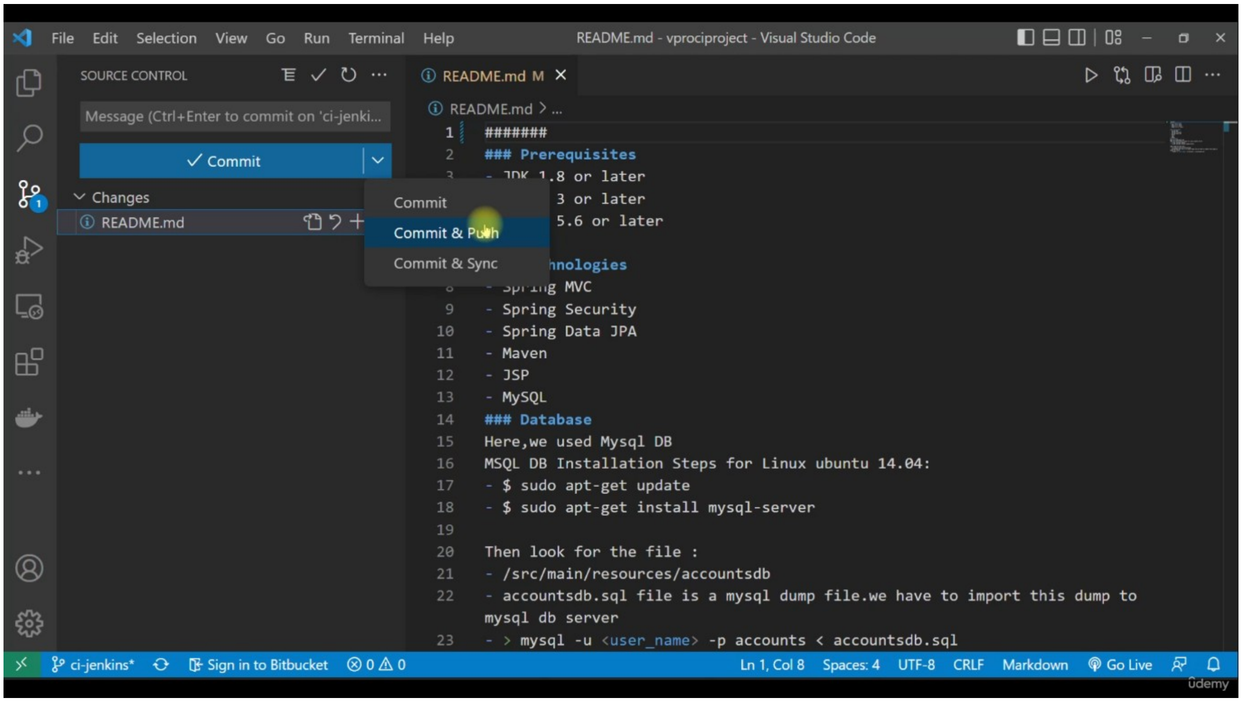
```
imran@LAPTOP-2JOOK66A MINGW64 /f/projectgitrepo/vprociproject (main)
$ git checkout ci-jenkins
Switched to branch 'ci-jenkins'
Your branch is up to date with 'origin/ci-jenkins'.

imran@LAPTOP-2JOOK66A MINGW64 /f/projectgitrepo/vprociproject (ci-jenkins)
$ git push --all origin
Enumerating objects: 1001, done.
Counting objects: 100% (1001/1001), done.
Delta compression using up to 12 threads
Compressing objects: 100% (561/561), done.
Writing objects: 100% (1001/1001), 37.65 MiB | 1.84 MiB/s, done.
Total 1001 (delta 309), reused 1001 (delta 309), pack-reused 0
remote: Resolving deltas: 100% (309/309), done.
To github.com:imnowdevops/vprociproject.git
 * [new branch]      ci-jenkins -> ci-jenkins
 * [new branch]      main -> main

imran@LAPTOP-2JOOK66A MINGW64 /f/projectgitrepo/vprociproject (ci-jenkins)
$ code .
```



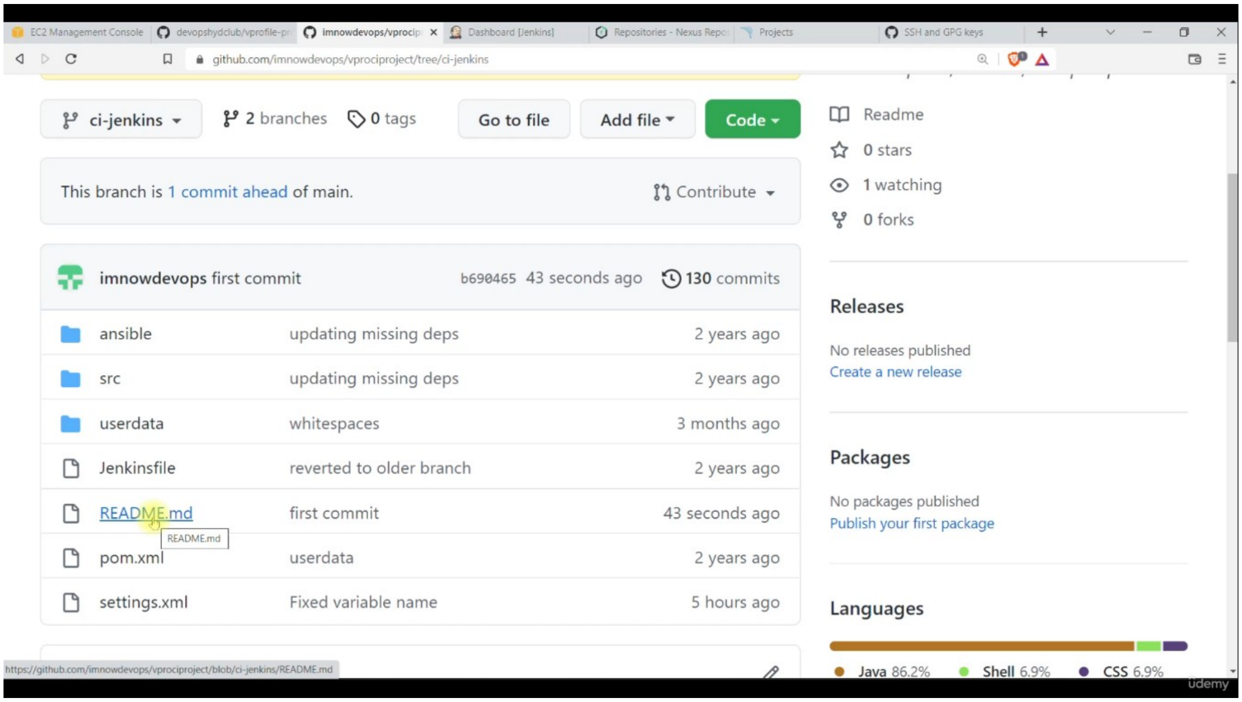
Discover the best customizations to make VS Code yours.

Jump right into VS Code and get an overview of the must-have features.

'Extension Pack for Java' extension is recommended for this repository. Do you want to install?


File Edit Selection View Go Run Terminal Help
README.md - vprociproject - Visual Studio Code
SOURCE CONTROL
Message (Ctrl+Enter to commit on 'ci-jenki...
✓ Commit
Changes
README.md
Commit
Commit & Push
Commit & Sync
README.md M
README.md > ...
ci-jenkins*
Sign in to Bitbucket
⊗ 0 ⚠ 0
Ln 1, Col 8 Spaces: 4 UTF-8 CRLF Markdown Go Live
ûdemy

```
#######
### Prerequisites
- JDK 1.8 or later
      3 or later
      5.6 or later

      hnologies
- Spring MVC
- Spring Security
- Spring Data JPA
- Maven
- JSP
- MySQL
### Database
Here,we used Mysql DB
MSQL DB Installation Steps for Linux ubuntu 14.04:
- $ sudo apt-get update
- $ sudo apt-get install mysql-server

Then look for the file :
- /src/main/resources/accountsdb
- accountsdb.sql file is a mysql dump file.we have to import this dump to
mysql db server
- > mysql -u <user_name> -p accounts < accountsdb.sql
```



This branch is 1 commit ahead of main.

imnowdevops first commit b690465 43 seconds ago 130 commits

ansible	updating missing deps	2 years ago
src	updating missing deps	2 years ago
userdata	whitespaces	3 months ago
Jenkinsfile	reverted to older branch	2 years ago
README.md	first commit	43 seconds ago
pom.xml	userdata	2 years ago
settings.xml	Fixed variable name	5 hours ago

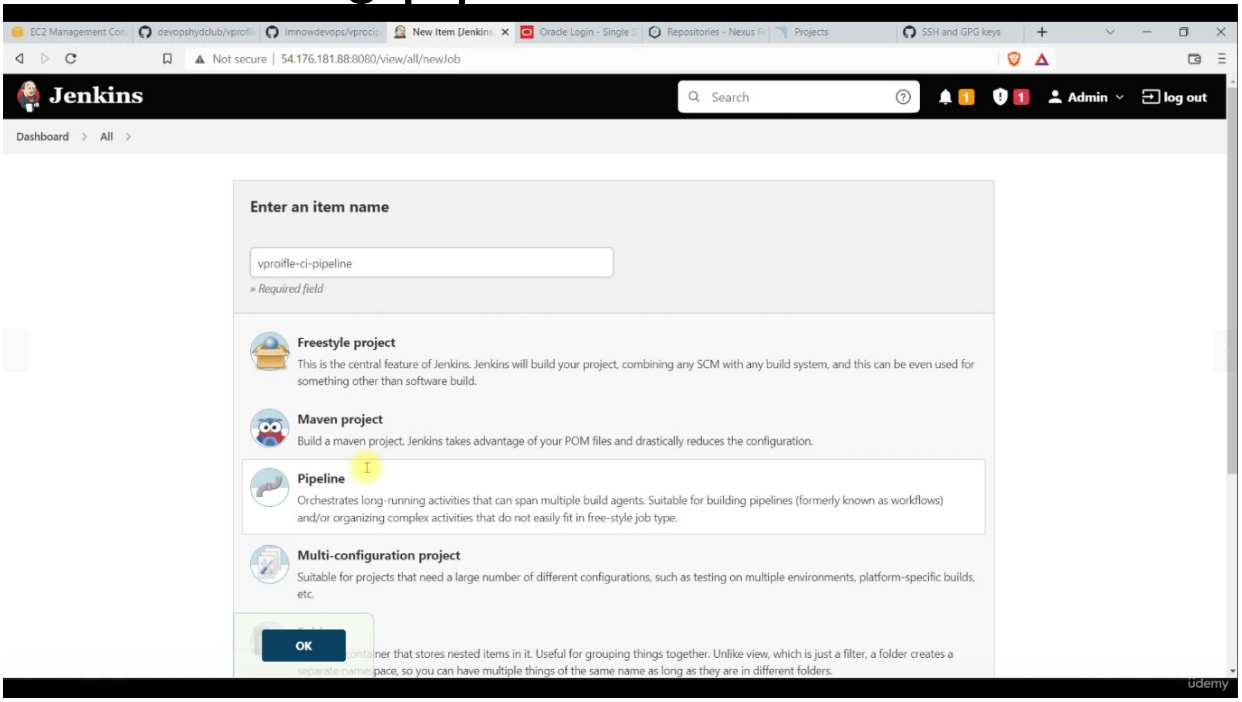
No releases published
Create a new release

No packages published
Publish your first package

● Java 86.2% ● Shell 6.9% ● CSS 6.9%

7.Build Job with Nexus integration

7.1 Creating pipeline



Not secure | 54.176.181.88:8080/view/all/newJob

Jenkins

Dashboard > All >

Enter an item name

vproifle-ci-pipeline

» Required field

Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

Maven project
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

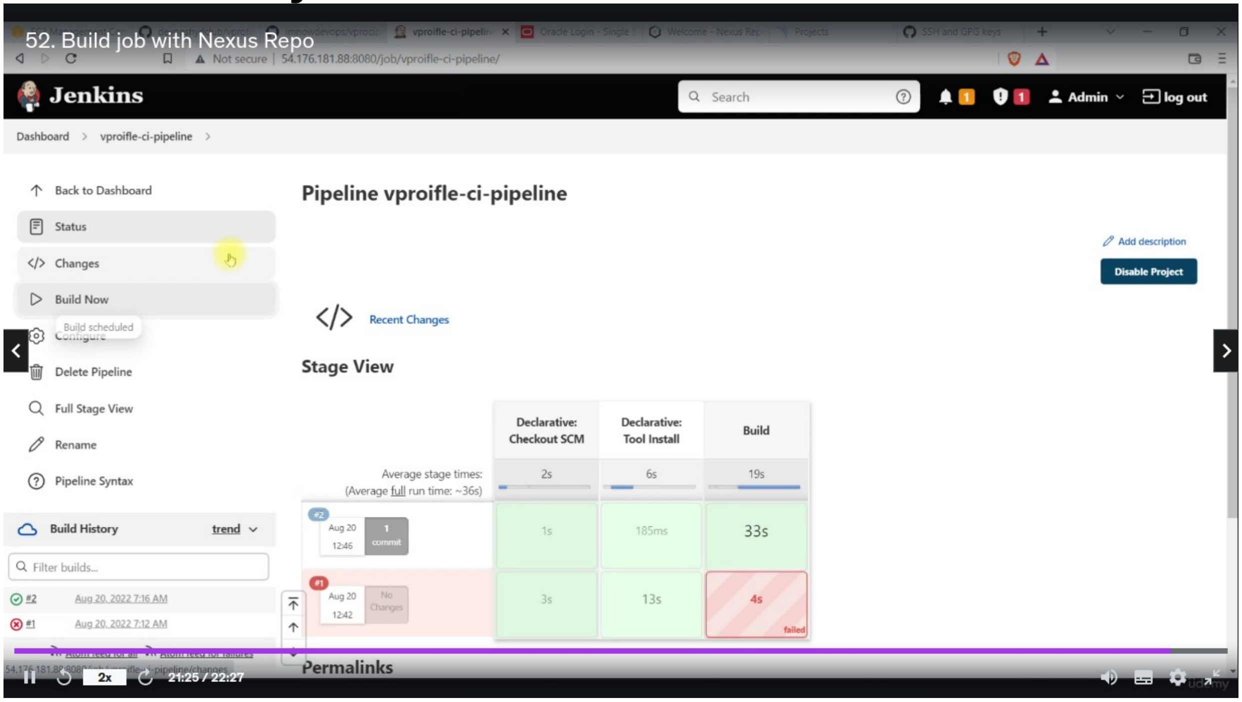
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

OK

...ner that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

7.2 Build job



52. Build job with Nexus Repo

Not secure | 54.176.181.88:8080/job/vproifle-ci-pipeline/

Jenkins

Dashboard > vproifle-ci-pipeline >

Pipeline vproifle-ci-pipeline

Recent Changes

Stage View

	Declarative: Checkout SCM	Declarative: Tool Install	Build
Average stage times: (Average full run time: ~36s)	2s	6s	19s
#2 Aug 20 12:46 1 commit	1s	185ms	33s
#1 Aug 20 12:42 No Changes	3s	13s	4s failed

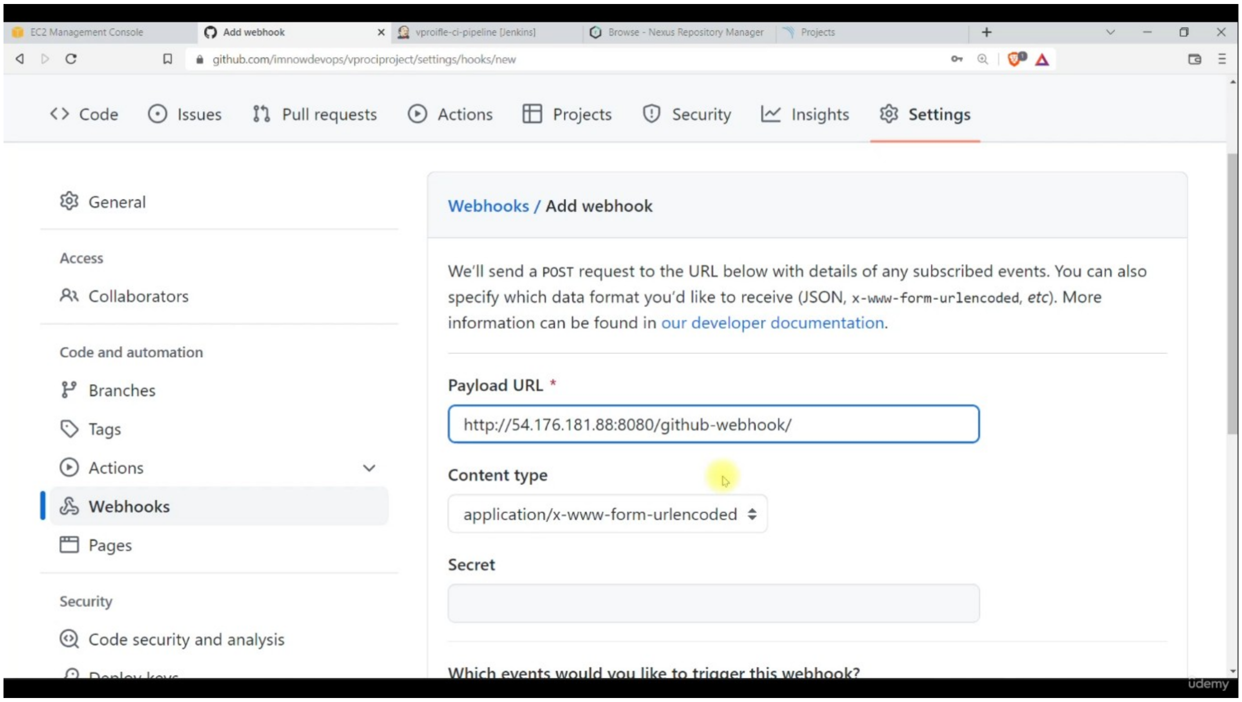
Build History trend

#2	Aug 20, 2022 7:16 AM
#1	Aug 20, 2022 7:12 AM

Atom feed for all Atom feed for failures

Permalinks

8.Github Webhook



Webhooks / Add webhook

We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, `x-www-form-urlencoded`, *etc*). More information can be found in our developer documentation.

Payload URL *

http://54.176.181.88:8080/github-webhook/

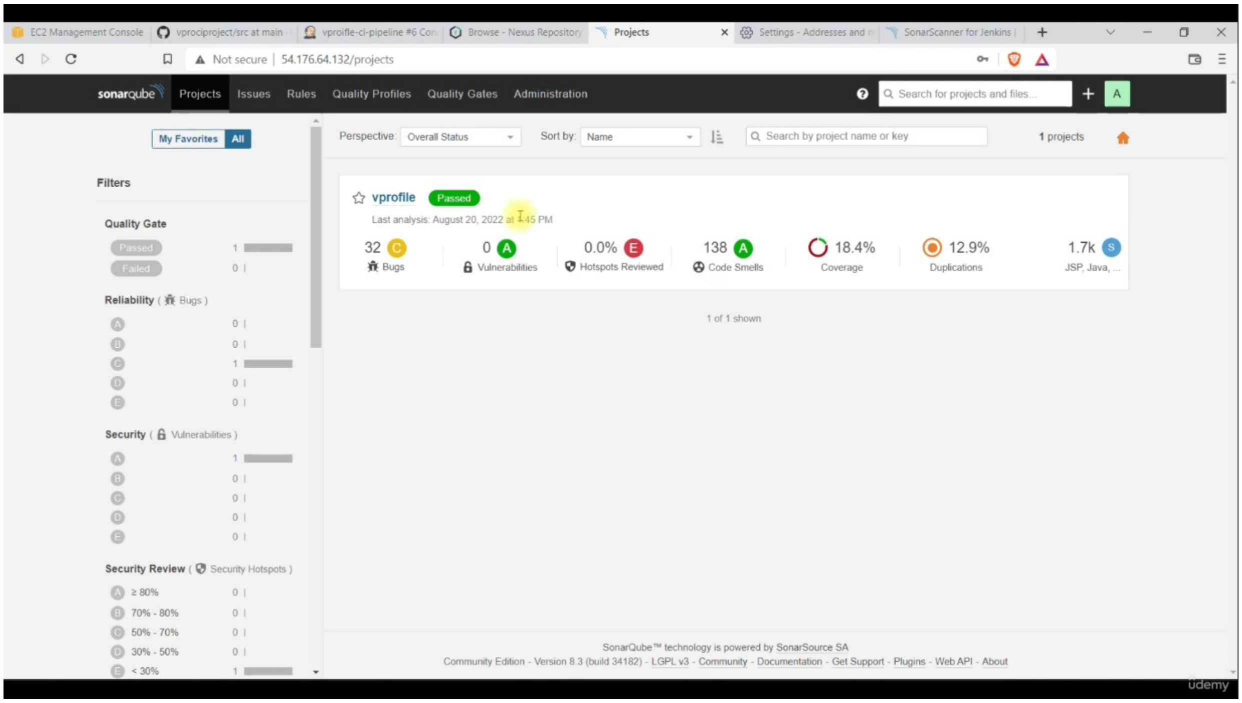
Content type

application/x-www-form-urlencoded

Secret

Which events would you like to trigger this webhook?

9.Sonarqube server integration stage



Filters

Quality Gate

Passed	1
Failed	0

Reliability (Bugs)

A	0
B	0
C	1
D	0
E	0

Security (Vulnerabilities)

A	1
B	0
C	0
D	0
E	0

Security Review (Security Hotspots)

A ≥ 80%	0
B 70% - 80%	0
C 50% - 70%	0
D 30% - 50%	0
E < 30%	1

vprofile Passed

Last analysis: August 20, 2022 at 1:45 PM

32 C	0 A	0.0% E	138 A	18.4%	12.9%	1.7k S
Bugs	Vulnerabilities	Hotspots Reviewed	Code Smells	Coverage	Duplications	JSP, Java, ...

1 of 1 shown

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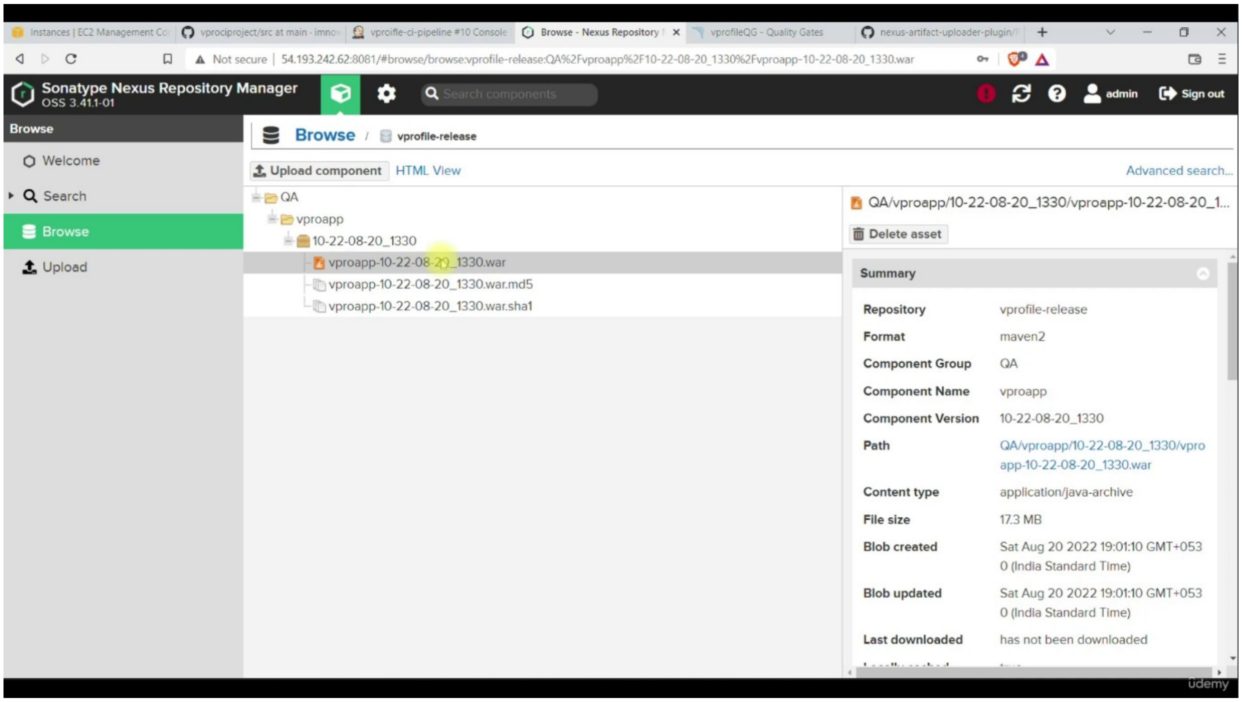
Community Edition - Version 8.3 (build 34182) - LGPL v3 - Community - Documentation - Get Support - Plugins - Web API - About

10. Nexus Artifact upload stage



Not secure | 54.193.242.62:8081/#browse/browse:vprofile-release:QA%2Fvproapp%2F10-22-08-20_1330%2Fvproapp-10-22-08-20_1330.war

Sonatype Nexus Repository Manager
OSS 3.41.1-01

Browse / vprofile-release

- QA
  - vproapp
    - 10-22-08-20_1330
      - vproapp-10-22-08-20_1330.war
      - vproapp-10-22-08-20_1330.war.md5
      - vproapp-10-22-08-20_1330.war.sha1

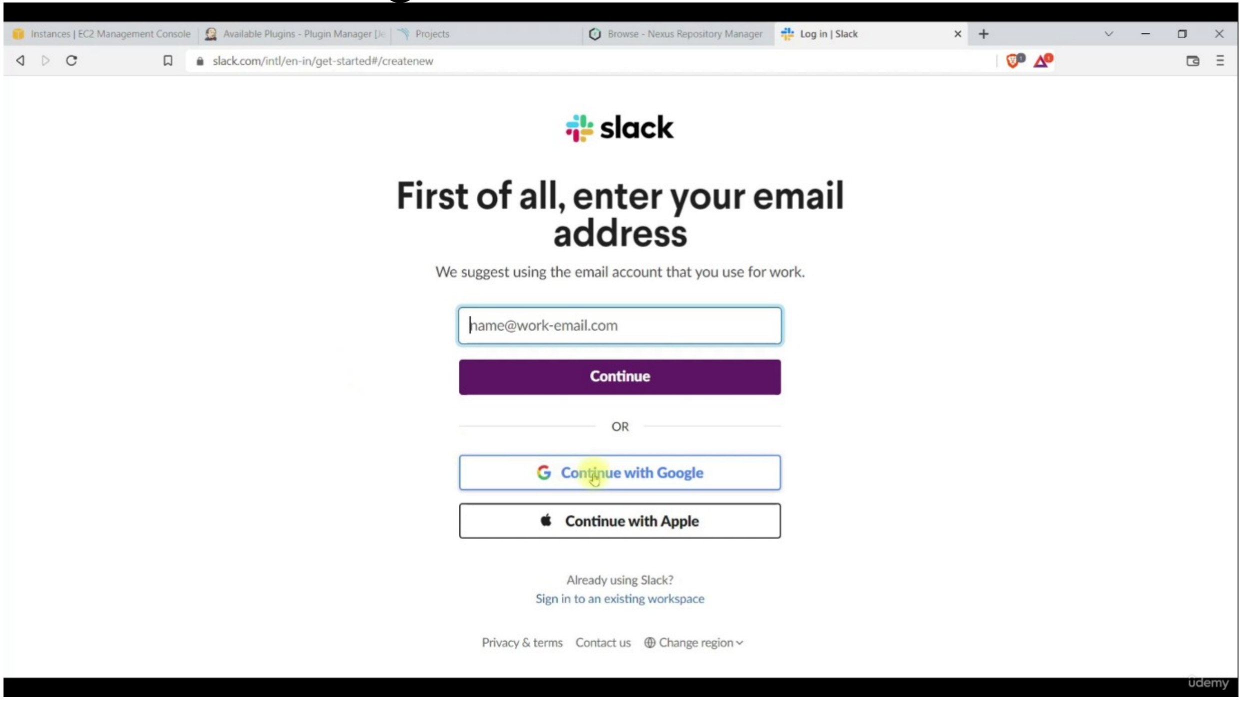
QA/vproapp/10-22-08-20_1330/vproapp-10-22-08-20_1...

Summary

Repository	vprofile-release
Format	maven2
Component Group	QA
Component Name	vproapp
Component Version	10-22-08-20_1330
Path	QA/vproapp/10-22-08-20_1330/vproapp-10-22-08-20_1330.war
Content type	application/java-archive
File size	17.3 MB
Blob created	Sat Aug 20 2022 19:01:10 GMT+0530 (India Standard Time)
Blob updated	Sat Aug 20 2022 19:01:10 GMT+0530 (India Standard Time)
Last downloaded	has not been downloaded

11.Slack Notification

11.1 Creating account



slack.com/intl/en-in/get-started#/createnew

First of all, enter your email address

We suggest using the email account that you use for work.

name@work-email.com

Continue

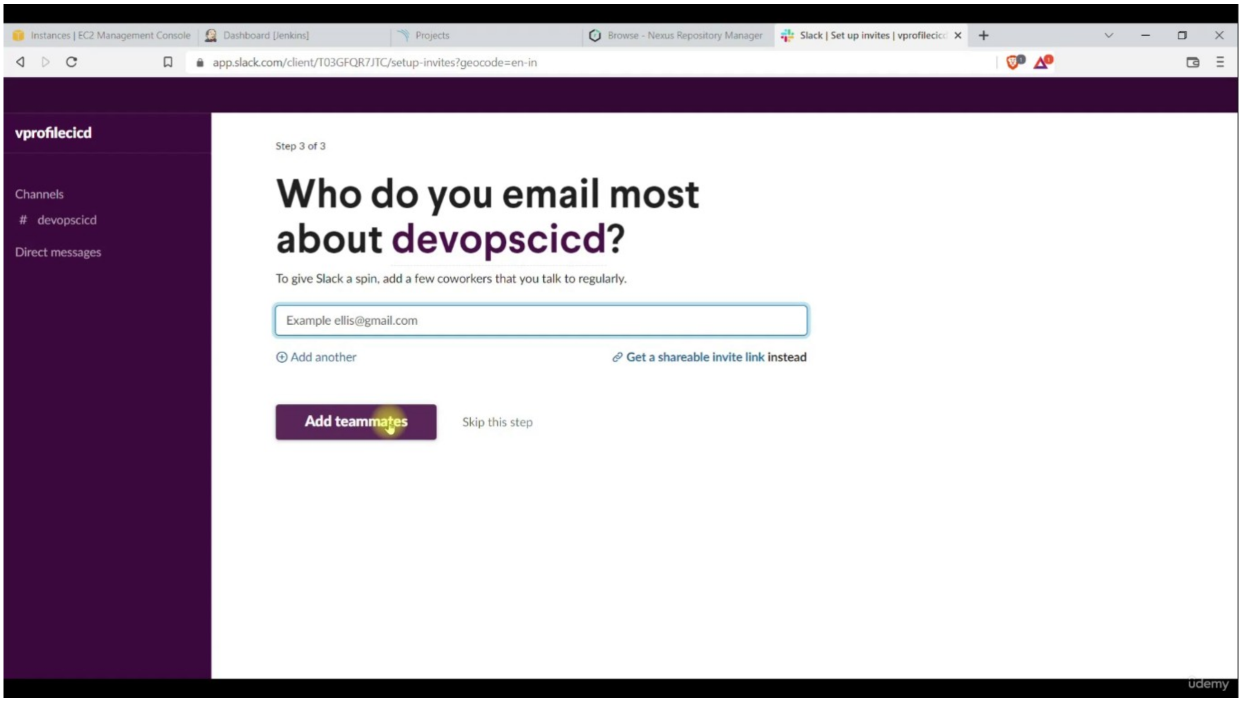
OR

Continue with Google

Continue with Apple

Already using Slack?
Sign in to an existing workspace

Privacy & terms   Contact us   Change region


Instances | EC2 Management Console
Dashboard [Jenkins]
Projects
Browse - Nexus Repository Manager
Slack | Set up invites | vprofilecicd
app.slack.com/client/T03GFQR7JTC/setup-invites?geocode=en-in
vprofilecicd
Channels
# devopscicd
Direct messages
udemy

Step 3 of 3

Who do you email most about devopscicd?

To give Slack a spin, add a few coworkers that you talk to regularly.

Example ellis@gmail.com

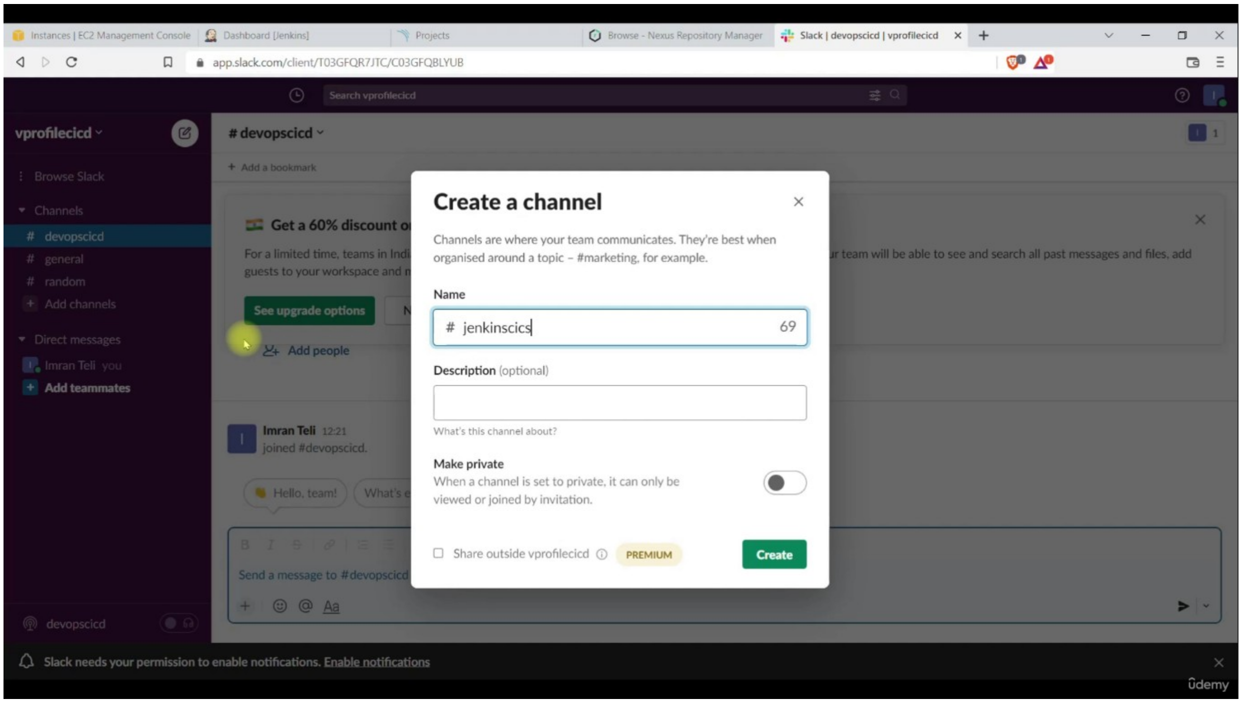
⊕ Add another

Get a shareable invite link instead

Add teammates

Skip this step

11.2 Creating channel in slack



Create a channel

Channels are where your team communicates. They're best when organised around a topic – #marketing, for example.

Name

jenkinscics 69

Description (optional)

What's this channel about?

Make private

When a channel is set to private, it can only be viewed or joined by invitation.

□ Share outside vprofilecicd PREMIUM

Create

Slack needs your permission to enable notifications. Enable notifications

Input and output

Input:-code commit

output:-well tested artifact

Conclusion

By developing CI-pipeline in Jenkins and tools we conclude that it reduce the time effort, cost effort, dependency on release and build team. It makes the developers work easier. The CI/CD pipeline is a powerful combination of automation tools to build, test and deploy code, that drastically improves its quality and makes the integration of new features blazing fast.

References

1)https://www.google.com/search?channel=fs&client=ubuntu&q=stack+overflow

2)https://www.google.com

3)https://www.google.com/search?channel=fs&client=ubuntu&q=udemy

4)https://www.youtube.com