

## Advance DevOps Practical Exam

### Terraform

#### Step 1:

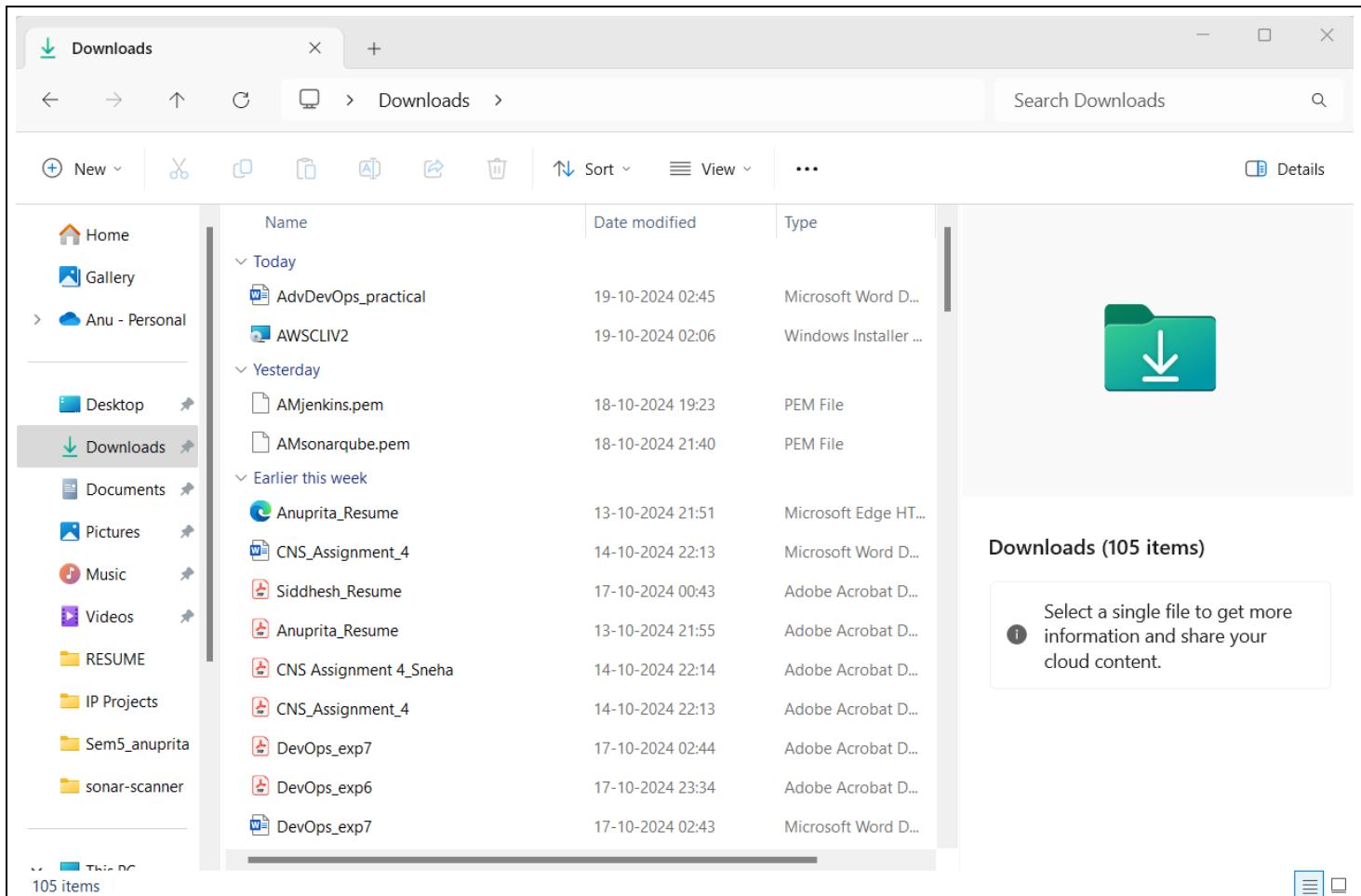
Install terraform and add it to environment variable. Now, download Amazon CLI by visiting the following website.

Visit <https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html>

The screenshot shows the AWS Command Line Interface User Guide for Version 2. The left sidebar has sections like 'Recently added to this guide' (Amazon ECR Public examples using AWS CLI, Route 53 Profiles examples using AWS CLI, Security Lake examples using AWS CLI), 'About the AWS CLI', 'Get started' (Prerequisites, Install/Update, Past releases, Build and install from source, Amazon ECR Public/Docker, Setup), and 'Configure the AWS CLI'. The main content area is titled 'Windows' under 'Install and update requirements'. It lists support for Microsoft-supported versions of 64-bit Windows and admin rights to install software. Below this is the 'Install or update the AWS CLI' section, which explains how to update the current installation by downloading a new installer each time you update. It provides two methods: 1. Downloading and running the AWS CLI MSI installer for Windows (64-bit) from <https://awscli.amazonaws.com/AWSCLIV2.msi>. Alternatively, you can run the `msiexec` command to run the MSI installer. The command shown is `C:\> msiexec.exe /i https://awscli.amazonaws.com/AWSCLIV2.msi`. 2. Confirming the installation by opening the Start menu, searching for cmd to open a command prompt, and running the same command. The right sidebar contains links for 'AWS CLI install and update instructions', 'Troubleshooting AWS CLI install and uninstall errors', and 'Next steps'.

Now, click on install <https://awscli.amazonaws.com/AWSCLIV2.msi>

Complete the installation process for AWSCLIV2



## Step 2:

Open AWS Academy and now click on AWS Details and then click on show button present in front of AWS CLI label. You will be shown with your cedentials

https://awsacademy.instructure.com/courses/87962/modules/items/8016654

ALLv2EN-US... > Modules > AWS Academy > Launch AWS Academy Learner Lab

AWS Details

Learner Lab

Environment Overview

Environment Navigation

Access the AWS Management Console

Region restriction

Service usage and other restrictions

Using the terminal in the browser

Running AWS CLI commands

Using the AWS SDK for Python

Preserving your budget

Accessing EC2 Instances

SSH Access to EC2 Instances

SSH Access from Windows

SSH Access from a Mac

Instructions last updated: 2024-08-06

Environment Overview

The screenshot shows the AWS Academy Learner Lab interface. On the left is a dark sidebar with icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main area has a breadcrumb navigation: ALLv2EN-US... > Modules > AWS Acad... > Launch AWS Academy Learner Lab. The top right shows usage details: Used \$1.6 of \$50, 00:43, Start Lab, End Lab, AWS Details, Readme, Reset, and a Close button. The central workspace has tabs for Home, Modules (selected), Discussions, Grades (with a red notification dot), and Lucid (Whiteboard). The Lucid tab is active, showing a terminal window with the command 'eee\_W\_3429984@runweb141049:~\$'. To the right is a 'Cloud Access' panel with sections for AWS CLI, Cloud Labs, and AWS SSO. It displays session information: Remaining session time: 00:42:11(43 minutes), Session started at: 2024-10-18T10:50:58-0700, Session to end at: 2024-10-18T14:50:58-0700, Accumulated lab time: 1 day 06:28:00 (1828 minutes), and No running instance. Buttons for SSH key, Download PEM, Download PPK, AWS SSO, and Download URL are present. Below these are fields for AWSAccountID (856746069793) and Region (us-east-1).

This screenshot is similar to the one above, showing the AWS Academy Learner Lab interface. The 'Cloud Access' panel now displays a very long, multi-line text block representing AWS credentials, starting with '[default]' and containing numerous AWS access keys, session tokens, and other configuration details.

### Step 3:

Now, create a folder in VSCode and create a main.tf file in it with the following content.

```
# Specify the AWS provider
```

```
provider "aws" {
```

```
    region = "us-east-1" # Replace with your preferred region
```

```
}
```

```
# Jenkins instance
```

```
resource "aws_instance" "jenkins" {
```

```

ami      = "ami-05f408238af346b4f" # Amazon Linux 2 AMI
instance_type = "t2.micro"
key_name    = "AMjenkins"
tags = {
    Name = "JenkinsServer"
}

# User data to install Jenkins with Java 17
user_data = <<-EOF
#!/bin/bash
sudo yum update -y
sudo dnf install -y java-17-amazon-corretto-devel # Install Java 17
sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
sudo yum install -y Jenkins
sudo systemctl start Jenkins
sudo systemctl enable Jenkins
EOF

}

# SonarQube instance
resource "aws_instance" "sonarqube" {

    ami      = "ami-05f408238af346b4f" # Amazon Linux 2 AMI
    instance_type = "t2.medium"
    key_name    = "AMsonarqube"
    tags = {
        Name = "SonarQubeServer"
    }

    # User data to install SonarQube manually
    user_data = <<-EOF
#!/bin/bash
sudo yum update -y
sudo su -
cd /opt
wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-10.7.0.96327.zip
unzip sonarqube-10.7.0.96327.zip
sudo adduser sonar
sudo passwd sonar
sudo chown -R sonar:sonar /opt/sonarqube-10.7.0.96327
su - sonar -c "/opt/sonarqube-10.7.0.96327/bin/linux-x86-64/sonar.sh start"
EOF
}

```

```
1 # Specify the AWS provider
2 provider "aws" {
3   region = "us-east-1" # Replace with your preferred region
4 }
5
6 # Jenkins instance
7 resource "aws_instance" "jenkins" {
8   ami           = "ami-05f498238af346b4f" # Amazon Linux 2 AMI
9   instance_type = "t2.micro"
10  key_name      = "AMjenkins"
11  tags = {
12    Name = "JenkinsServer"
13  }
14
15 # User data to install Jenkins with Java 17
16 user_data = <<-EOF
17 #!/bin/bash
18 sudo yum update -y
19 sudo dnf install -y java-17-amazon-corretto-devel # Install Java 17
20 sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
21 sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io.key
22 sudo yum install -y jenkins
23 sudo systemctl start jenkins
24 sudo systemctl enable jenkins
25 EOF
26 }
27
28 # SonarQube instance
29 resource "aws_instance" "sonarqube" {
30   ami           = "ami-05f498238af346b4f" # Amazon Linux 2 AMI
31   instance_type = "t2.medium"
32   key_name      = "AMsonarqube"
33   tags = {
34     Name = "sonarQubeServer"
35   }
36
37 # User data to install SonarQube manually
38 user_data = <<-EOF
39 #!/bin/bash
40 sudo yum update -y
41 sudo su -
42 cd /opt
```

#### Step 4:

Now, to ensure and run the aws cli commands in vs code terminal, run the following commands

aws –version

aws configure

(Write the content as mentioned in the figure below)

```
PS D:\Sem5_anuprita\AdvDevops_Practical> aws --version
aws-cli/2.18.10 Python/3.12.6 Windows/11 exe/AMD64
PS D:\Sem5_anuprita\AdvDevops_Practical> aws configure
● AWS Access Key ID [None]: ASIA406QUR4QUM46EBFG
AWS Secret Access Key [None]: g101lgQ880R51g0Nx0E8oX3TnhxBcJ5ubFTUHU
Default region name [None]: us-east-1
Default output format [None]: json
○ PS D:\Sem5_anuprita\AdvDevops_Practical>
```

#### Step 5:

Now, run the following commands in the vs code terminal to set the credential secrets.

```
$env:AWS_ACCESS_KEY_ID="ASIA4O6QLR4QWMA6EBFG"
$env:AWS_SECRET_ACCESS_KEY="g101LgQ880R5IgoNxoOE8oX3TNhxBcJ5uBfTUHuU"
$env:AWS_SESSION_TOKEN="IQoJb3JpZ2luX2VjEO//////////wEaCXVzLXdIc3QtMiJIMEYCIQDFth+aigG/gP+Z6F3r+MqGoz
mnWIMrKNwWhAdlQybeowlhANM0Vv37FoO8JPYclXeF9WdzbBVNXuzCyL3CFTlbFITKrICCFgQARoMODU2NzQ2MDY5Nzk
zlgzb754SQVtRN0LY6gqjwLRheg15jeclfhu956B4lw1wh7nh8uAbmksRgzTFn0f/XRdNDp8umD5361F3CB0Kw0y3u2iUiappL
GRgmAIs6lpwx91OaD/IziE+J6jqA9werjjE+vPSwJZDjBAI3AOsXEqrHHOxOCMnV8tDADefFFdq4/TVCpj7XrZZbr/bI9b33kA28Y
b02vxwFpXXwCjcuPtkae+kPC5v74IAb1S0gEXudqQv1okS7d+M6hg3qOqrIswTZJ52IZHDZYbeavRrU5qv8W+ky95bOhy1fb3
HKUSGKnpS6Pu2IDqjG97SiAFiB6YCxBzq4UxFJVVreSMILwMPzbL7nq87z3lbRNHbj3RyIWA0TLNBwNNKT92DPyqMP+jzbgG
OpwBBmh89toqaGEkit4IMz7vMppk0w4Q6pgBb/qWs5QtACBlxE6MMqUMBvMquTpP7t3u48g6Z7/ebnkNnf4xtfZ+MgcGY
pwWqkHhiBg3QoX4toPicq83phWThYfOaRop4D/V7h9en8dRRMLuYkEh545h55d+dHbzgop1JpKCLCvcDO8jh3UGzDhSllvEB
5BYjnwrnm24CiA3bX4yHa/2o"
```

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows a tree view of the project structure under "ADVEOPS PRACTICAL". The files listed are ".terraform", ".terraform.lock.hcl", "hello.py", and "main.tf".
- Terminal:** The terminal tab is active, displaying PowerShell command history. The commands entered are:
  - PS D:\Sem5\_anuprita\AdvDevops\_Practical> \$env:AWS\_ACCESS\_KEY\_ID="ASIA406QLR4QWMA6EBFG"
  - PS D:\Sem5\_anuprita\AdvDevops\_Practical> \$env:AWS\_SECRET\_ACCESS\_KEY="g101LgQ88R51goNx0OE8oX3TNhx8cJ5uBFtUhUu"
  - PS D:\Sem5\_anuprita\AdvDevops\_Practical> \$env:AWS\_SESSION\_TOKEN="J0oLbj3jPz2lu2xVjeO//////////wEaCxzLx1c30tMiJIMEYClODfth+ai5g/gP+Z6F3r+NgGozmhk1MrKnWlhAd1QybeowtHnN@0v37fo0o83jPVc1xe79udrbtMvxu1zcy13CFT1lbfITKpICCFg0AR0M0012znzQ2HDyNzKzTgfb75ASQVtRn0LYggjwLrheg15jeclfhu956B41w1w7n8uAmksRg2TFnOf/XRdhDp8um05361FcB0Kw0y3u2iuJiappLRGwmAis61pxwx910ab/1ziIE+j6jqAwerjjE+rPSwQZDj8A1340sXEqrHbxOCmN8tD40eFfdq4/IVCpj7xNz2br/bi9b33kA28yb02xwfPxWxCjcuPtkae+kPC5v741Ab150gExUDqVtLks7dHM6fgJq0qrtsWtJ3521ZIDbYeaEvruVsqaWhky95b0hyf1b3HKUSGKip6FuIDqjG9751Af1B6YCXBzq4txf3MvrsN11wP2bl7nq8731lBrNHb3J3RY1wA0TlNBwINkT2D0PyqH+jzbgGOpwBmhs9togaEkit4lMz/wlppkowQ0cpgbBb/wks5QATcb1x60MMqUlbVmquTp7E3u48g627tbrklnf4xtf2+HgCgypwqkh1hBg3QoX4toPicq83phWlThyFoRop4D/V7h9en8drR4luYkEh545h55d+dlhBzgop17pkCLcvCD08jh3UGzdhSl1vEB8BYjnwm24C1A3bx4yHa/zo"
  - PS D:\Sem5\_anuprita\AdvDevops\_Practical> [REDACTED]
- Output:** A panel showing the output of the last command entered.
- Search:** A search bar at the top with the text "AdvDevops\_Practical".
- Bottom Status Bar:** Shows file navigation (In 6, Col 19), workspace settings (Spaces: 2, UTF-8, CRLF), and other status indicators.

## **Step 6:**

Now, to check whether the aws cli is connected to your aws account run the following command.

```
aws sts get-caller-identity  
aws configure
```

```

File Edit Selection View Go Run Terminal Help < > ⌘ AdvDevops_Practical
EXPLORER PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + powershell
ADVDEVOPS_PRACTICAL
> .terraform ...
PS D:\Sem5_anuprita\AdvDevops_Practical> $env:AWS_ACCESS_KEY_ID="ASTA406QLR4QNMAGEBFG"
PS D:\Sem5_anuprita\AdvDevops_Practical> $env:AWS_SECRET_ACCESS_KEY="g0880h5lgnxooE8ox3TnhxBcJ5ubFTUHuU"
PS D:\Sem5_anuprita\AdvDevops_Practical> $env:AWS_SESSION_TOKEN="IQoJb3j2z1uZv2jE0//////////wEaKVLxd1cQ0M1J1IMEYCIQDFth+aigc/gP+75F3r+MjGozmnl1MrkNwhAd1QybeowIhANMVW37Fc080Pyc1xeF9wdzb8VWxuzcyl3Cf1lbFTkr1CCFgQAr0MODU2nQ2M0YS5uLzk1gzf/b75ASQvtRN0LYggjwLRheg15jcc1fhu56B41xdwh7nh8uAbmksRgzTfn0f/XRdNDpJumDS361FC3C08Kweyazui0iapp1Orgn#Is61pw910d/TzIE+36jp0werjj+E+PSwZDjBA13AO5XEqHHOXCMV8tDadFFfdq4/TCp]jXrZzbr/b19b33kA28yb02xwfpxXwCjcUp1kae+kPC5v74TA1b1S0gEkdqQv1ok57d4M6hg30pr1swTZ521ZH2DybeavrUSqv8&h+y5b0hlyFb3HKUSGKnpSpU21Dqjg9751Af186yCxbzq4UxfJWVre5MILWMPzbL7ng87z31bRMh03Ry1w8l0tBwNNK192DfPyMP+jzbgeOpvB1m89t0qGEki14Lmz7vppk8w4Q6pgbgl/qws5QACBLx6M9qJUMBVqutP7t3u8g677ebnkNnf4xtfz+HgcGypwMqkjhig3Qox4toPicq83pwHtyfoalRop4D/V7h0en8dRRMLuykeH545h5d+dhbzgop1jkCLcvCD8jhUGzdh5lVE85BYjnwm24C1A3bxAYHa/20"
PS D:\Sem5_anuprita\AdvDevops_Practical> aws sts get-caller-identity
{
    "UserId": "AROA06QLR4QNM40PT3IV:user:3413602-MHAPANKAR_ANUPRITA_ANAND",
    "Account": "856746069793",
    "Arn": "arn:aws:sts::856746069793:assumed-role/voclabs/user3413602-MHAPANKAR_ANUPRITA_ANAND"
}

PS D:\Sem5_anuprita\AdvDevops_Practical> terraform apply
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# aws_instance.jenkins will be created
+ resource "aws_instance" "jenkins" {
    + ami = "ami-0c55b159cbfafe1f0"
    + ami_type = "(known after apply)"
    + associate_public_ip_address = "(known after apply)"
    + availability_zone = "(known after apply)"
    + cpu_core_count = "(known after apply)"
    + cpu_threads_per_core = "(known after apply)"
    + disable_api_stop = "(known after apply)"
    + disable_api_termination = "(known after apply)"
    + ebs_optimized = "(known after apply)"
    + get_password_data = "(known after apply)"
    + host_id = "(known after apply)"
    + host_resource_group_arn = "(known after apply)"
    + iam_instance_profile = "(known after apply)"
    + id = "(known after apply)"
    + instance_initiated_shutdown_behavior = "(known after apply)"
    + instance_lifecycle = "(known after apply)"
    + instance_state = "(known after apply)"
    + instance_type = "=t2.micro"
    + ipv4_address_count = "(known after apply)"
    + ipv6_addresses = "(known after apply)"
    + key_name = "(known after apply)"
    + monitoring = "(known after apply)"
}

```

## Step 7:

Now, to get the AMI ID run the following command and select any of the AMI ID and replace the AMI ID present in main.tf file in VSCode.

```
aws ec2 describe-images --owners amazon --filters "Name=name,Values=amzn2-ami-hvm-2.0.*-x86_64-gp2" --query "Images[*].[ImageId,Name]" --region us-east-1 --output table
```

```

File Edit Selection View Go Run Terminal Help < > ⌘ AdvDevops_Practical
EXPLORER PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + aws
main.tf x hello.py
main.tf
29 resource "aws_instance" "sonarqube" {
30   user_data = <<-EOF
31     wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-10.7.0.96327.zip
32     unzip sonarqube-10.7.0.96327.zip
33     sudo adduser sonar
34     sudo passwd sonar
35     sudo chown -R sonar:sonar /opt/sonarqube-10.7.0.96327
36     sonar -c "/opt/sonarqube-10.7.0.96327/bin/linux-x86-64/sonar.sh start"
37   EOF
38 }
39
40
41
42
43
44
45
46
47
48
49
50
51

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\Sem5_anuprita\AdvDevops_Practical> aws ec2 describe-images --owners amazon --filters "Name=name,Values=amzn2-ami-hvm-2.0.*-x86_64-gp2" --query "Images[*].[ImageId,Name]" --region us-east-1 --output table
|-----+-----+-----|
| DescribeImages |-----+
|-----+-----+-----+
| amzn2-ami-hvm-2.0.20230119.1-x86_64-gp2 | amzn2-ami-hvm-2.0.20230119.1-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20240620.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20240620.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20241014.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20241014.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20240223.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20240223.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230418.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230418.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230419.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230419.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230420.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230420.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230421.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230421.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230422.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230422.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230423.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230423.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230424.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230424.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230425.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230425.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230426.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230426.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230427.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230427.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230428.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230428.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230429.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230429.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230430.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230430.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230501.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230501.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230502.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230502.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230503.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230503.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230504.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230504.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230505.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230505.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230506.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230506.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230507.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230507.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230508.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230508.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230509.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230509.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230510.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230510.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230511.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230511.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230512.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230512.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230513.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230513.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230514.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230514.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230515.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230515.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230516.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230516.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230517.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230517.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230518.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230518.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230519.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230519.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230520.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230520.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230521.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230521.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230522.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230522.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230523.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230523.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230526.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230526.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230527.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230527.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230528.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230528.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230529.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230529.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230530.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230530.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230605.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230605.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230608.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230608.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230609.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230609.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230624.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230624.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230703.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230703.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230706.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230706.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230707.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230707.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230708.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230708.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230709.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230709.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230710.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230710.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230818.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230818.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230819.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230819.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230821.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230821.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230822.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230822.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230823.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230823.0-x86_64-gp2 |
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| amzn2-ami-hvm-2.0.20230826.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230826.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230827.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230827.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230828.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230828.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230829.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230829.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230830.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230830.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230831.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230831.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230901.0-x86_64-gp2 | amzn2-ami-hvm-2.0.20230901.0-x86_64-gp2 |
| amzn2-ami-hvm-2.0.20230902.0
```

After this run the following command

terraform init

terraform apply

The screenshot shows the VS Code interface with the 'TERMINAL' tab selected. The terminal window displays the following output:

```
+ tags_all = {
+   "Name" = "SonarQubeServer"
}
+ tenancy = (known after apply)
+ user_data = "84e016249e5fd73535afc3769cc27626514b358"
+ user_data_base64 = (known after apply)
+ user_data_replace_on_change = false
+ vpc_security_group_ids = (known after apply)

+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)

}
Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes
```

The screenshot shows the VS Code interface with the 'TERMINAL' tab selected. The terminal window displays the following output, which is scrollable:

```
+ capacity_reservation_specification (known after apply)
+ cpu_options (known after apply)
+ ebs_block_device (known after apply)
+ enclave_options (known after apply)
+ ephemeral_block_device (known after apply)
+ instance_market_options (known after apply)
+ maintenance_options (known after apply)
+ metadata_options (known after apply)
+ network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)

}
Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_instance.sonarqube: Creating...
aws_instance.jenkins: Creating...
aws_instance.sonarqube: Still creating... [10s elapsed]
aws_instance.jenkins: Still creating... [10s elapsed]
aws_instance.sonarqube: Creation complete after 16s [id=i-09f5733c9d7c06309]
aws_instance.jenkins: Creation complete after 16s [id=i-0b2d8414cbf9b34c5]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
PS D:\Semb_anuprita\AdvDevops_Practical>
```

## Step 8:

After this Terraform will automatically create 2 EC2 instances on the EC2 Dashboard. To check the running instances: Visit AWS EC2 Dashboard.

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'Instances' section, there is a link to 'Security Groups'. The main content area displays a table of instances. There are two instances listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
JenkinsServer	i-05f12961a9cf8cf3e	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-98-80
SonarQubeSer...	i-061f29e11e3fa1a8b	Running	t2.medium	2/2 checks passed	View alarms +	us-east-1c	ec2-54-21

Below the table, a modal window titled 'Select an instance' is open, indicating that an instance needs to be chosen for further configuration.

## Set up Security Groups for the given two instances

### Step 1:

Go to EC2 Dashboard and select the Security Groups present in the left pane or sidebar and the click on the create security group.

- a. Create a security group with name AMjenkins-security and give some description and add the inbounds rules given below.
- b. Create a security group with name AMsonarqube-security and give some description and add the inbounds rules given below.

The screenshot shows the AWS Security Groups page. On the left sidebar, under the 'Network & Security' section, there is a link to 'Security Groups'. The main content area displays a table of security groups. There are several security groups listed:

Name	Security group ID	Security group name	VPC ID	Description
-	sg-01e6da10b21246fb	launch-wizard-6	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-0a30cd41a2bc3be0d	launch-wizard-10	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-0963a34f0eff10854	launch-wizard-2	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-0bb51b11287383581	launch-wizard-7	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-0db2f912506e23dcc	launch-wizard-19	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-03d6b05220cf1a367	launch-wizard-18	vpc-0ec7dea564d6f7acf	launch-wizai
-	sg-05711f01ad7abff	allow_http	vpc-0ec7dea564d6f7acf	Allow HTTPD

AWS Services Search [Alt+S] N. Virginia vocabs/user3413602=MHAPANKAR\_ANUPRITA\_ANAND @ 8567-4606-9793

EC2 > Security Groups > sg-06766b363e07ace3b - AMjenkins-security > Edit inbound rules

## Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-0d9d57127ff521991	Custom TCP	TCP	8080	Custom	49.36.105.96/32 X
sgr-057e1247e95e38c1c	SSH	TCP	22	Custom	0.0.0.0/0 X
sgr-07584f2ee4e6eebfa	Custom TCP	TCP	8080	Custom	0.0.0.0/0 X

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. X

Cancel Preview changes Save rules

AWS Services Search [Alt+S] N. Virginia vocabs/user3413602=MHAPANKAR\_ANUPRITA\_ANAND @ 8567-4606-9793

EC2 > Security Groups > sg-04d93757f217a03e0 - AMsonarqube-security > Edit inbound rules

## Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-0b145544ddb02dbd0	SSH	TCP	22	Custom	0.0.0.0/0 X
sgr-0ca54f064e2b116c9	Custom TCP	TCP	9000	Custom	49.36.105.96/32 X
sgr-0b9649cd8bb7a9401	Custom TCP	TCP	9000	Custom	0.0.0.0/0 X

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. X

Cancel Preview changes Save rules

## Installation for Jenkins

Reference Video: <https://www.youtube.com/watch?v=bNuAS52ebLs>

### Step 1:

Click on the JenkinsServer and click on connect.

[CloudShell](#) [Feedback](#)

Instances (1/2) [Info](#)

Last updated 1 minute ago [Connect](#) Instance state [Actions](#) [Launch instances](#)

Find Instance by attribute or tag (case-sensitive) All states

Instance state = running Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
<input checked="" type="checkbox"/> JenkinsServer	i-05f12961a9cf8cf3e	<span>Running</span> <a href="#">View details</a> <a href="#">Logs</a>	t2.micro	<span>2/2 checks passed</span> <a href="#">View alarms</a>	<a href="#">View alarms</a>	us-east-1a	ec2-98-80-223-40.compute-1.amazonaws.com
<input type="checkbox"/> SonarQubeSer...	i-061f29e11e3fa1a8b	<span>Running</span> <a href="#">View details</a> <a href="#">Logs</a>	t2.medium	<span>2/2 checks passed</span> <a href="#">View alarms</a>	<a href="#">View alarms</a>	us-east-1c	ec2-54-213-11-111

**i-05f12961a9cf8cf3e (JenkinsServer)**

Details Status and alarms Monitoring Security Networking Storage Tags

Instance summary [Info](#)

Instance ID <a href="#">i-05f12961a9cf8cf3e (JenkinsServer)</a>	Public IPv4 address <a href="#">98.80.223.40   open address</a>	Private IPv4 addresses <a href="#">172.31.42.86</a>
IPv6 address -	Instance state <span>Running</span>	Public IPv4 DNS <a href="#">ec2-98-80-223-40.compute-1.amazonaws.com   open address</a>
Hostname type IP name: ip-172-31-42-86.ec2.internal	Private IP DNS name (IPv4 only) <a href="#">ip-172-31-42-86.ec2.internal</a>	Elastic IP addresses
Answer private resource DNS name	Instance type t2.micro	

EC2 > Instances > i-05f12961a9cf8cf3e > Connect to instance

## Connect to instance [Info](#)

Connect to your instance i-05f12961a9cf8cf3e (JenkinsServer) using any of these options

EC2 Instance Connect Session Manager [SSH client](#) EC2 serial console

Instance ID [i-05f12961a9cf8cf3e \(JenkinsServer\)](#)

- Open an SSH client.
- Locate your private key file. The key used to launch this instance is AMjenkins.pem.
- Run this command, if necessary, to ensure your key is not publicly viewable.  
 chmod 400 "AMjenkins.pem"
- Connect to your instance using its Public DNS:  
 ec2-98-80-223-40.compute-1.amazonaws.com

Example:

ssh -i "AMjenkins.pem" ec2-user@ec2-98-80-223-40.compute-1.amazonaws.com

**Note:** In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

[Cancel](#)

## Step 2:

Open Git Bash and go to the directory which has the Key downloaded. If you don't have the key downloaded, create a key pair and download the .pem file for the key.

Since, I have the key downloaded in Downloads directory, I used the following commands:

cd Download

dir AMienkins.pem\*

```
ssh -i "AMjenkins.pem" ec2-user@ec2-98-80-223-40.compute-1.amazonaws.com
```

```

ec2-user@ip-172-31-42-155:~ 
User@DESKTOP-QOK15A MINGW64 ~ (master)
$ cd Downloads
User@DESKTOP-QOK15A MINGW64 ~/Downloads (master)
$ dir AWjenkins.pem
AWjenkins.pem

User@DESKTOP-QOK15A MINGW64 ~/Downloads (master)
$ ssh -i "AWjenkins.pem" ec2-user@ec2-54-91-87-54.compute-1.amazonaws.com
The authenticity of host 'ec2-54-91-87-54.compute-1.amazonaws.com (54.91.87.54)' can't be established.
ED25519 key fingerprint is SHA256:LNZVrp4MquqGAgT9Kdfgnah0moJppMk06Ke+IbzoEMM.
This key is not known to any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-91-87-54.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

          #####
          #####\ Amazon Linux 2023
          ##### \#####
          ##### \#/
          ##### \#_> https://aws.amazon.com/linux/amazon-linux-2023
          ##### /_>
          ##### /_>
          ##### /_>

[ec2-user@ip-172-31-42-155 ~]$ |

```

### Step 3:

Go to google and search for Jenkins and then click on the Download and Deploy Link. Else, navigate using the following link: <https://pkg.jenkins.io/redhat-stable/>

### Step 4:

Now, run the initial 2 commands as it is and then run the next 2 commands using sudo word in the first; to run as root user.

# Jenkins Redhat Packages

To use this repository, run the following command:

```
sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
```

If you've previously imported the key from Jenkins, the `rpm --import` will fail because you already have a key. Please ignore that and move on.

```
yum install fontconfig java-17-openjdk
yum install jenkins
```

The rpm packages were signed using this key:

```
pub    rsa4096 2023-03-27 [SC] [expires: 2026-03-26]
      63667EE74BBA1F0A08A698725BA31D57EF5975CA
uid          Jenkins Project
sub    rsa4096 2023-03-27 [E] [expires: 2026-03-26]
```

You will need to explicitly install a supported Java runtime environment (JRE), either from your distribution (as described above) or another Java vendor (e.g., [Adoptium](#)).

## Weekly Release Line

Supported Java versions for the weekly release line are:

**2.463 (June 2024) and newer**

Java 17 or Java 21

**2.419 (August 2023) and newer**

OR

Run the following commands:

```
sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
```

```
sudo sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
```

```
sudo yum install fontconfig java-17-openjdk
```

```
sudo yum install jenkins
```

## Step 5:

Now, in order to install java run the following commands:

```
sudo yum install java-17-amazon-corretto-headless
```

```
sudo yum install java-17-amazon-corretto
```

```
sudo dnf install java-17-amazon-corretto-devel
```



```

ec2-user@ip-172-31-42-155:~-
Installing : libX11-1.8.10-2.amzn2023.0.1.x86_64
Installing : libXext-1.3.6-1.amzn2023.0.1.x86_64
Installing : libXcursor-0.4.11-6.amzn2023.0.2.x86_64
Installing : jvoicemeeting-filters-6.0.0-7.amzn2023.0.6.noarch
Installing : graphite2-1.3.14-7.amzn2023.0.2.x86_64
Installing : google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch
Installing : google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
Installing : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
Installing : cairo-1.17.6-2.amzn2023.0.1.x86_64
Installing : harfbuzz-7.0.0-2.amzn2023.0.1.x86_64
Installing : freetype-2.13.2-5.amzn2023.0.1.x86_64
Installing : fontconfig-2.13.94-2.amzn2023.0.2.x86_64
Running scriptlet: fontconfig-2.13.94-2.amzn2023.0.2.x86_64
Installing : alsa-lib-1.2.7.2-1.amzn2023.0.1.x86_64
Installing : java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64
Running scriptlet: java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64
Installing : java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
Running scriptlet: java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
Running scriptlet: fontconfig-2.13.94-2.amzn2023.0.2.x86_64
Running scriptlet: java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
Verifying : java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
Verifying : alsalib-1.2.7.2-1.amzn2023.0.1.x86_64
Verifying : cairo-1.17.6-2.amzn2023.0.1.x86_64
Verifying : dejavu-sans-fonts-2.37-16.amzn2023.0.2.noarch
Verifying : dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch
Verifying : dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch
Verifying : fontconfig-2.13.14-2.amzn2023.0.2.x86_64
Verifying : graphite2-1.3.14-7.amzn2023.0.2.x86_64
Verifying : google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch
Verifying : google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
Verifying : harfbuzz-7.0.0-2.amzn2023.0.1.x86_64
Verifying : java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
Verifying : java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64
Verifying : java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.0.6.noarch
Verifying : javapackages-filesystem-6.0.0-7.amzn2023.0.6.noarch
Verifying : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
Verifying : libX11-1.8.10-2.amzn2023.0.1.noarch
Verifying : libXau-1.0.11-6.amzn2023.0.1.x86_64
Verifying : libXext-1.3.6-1.amzn2023.0.1.x86_64
Verifying : libXrender-0.9.11-6.amzn2023.0.1.x86_64
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64
Verifying : libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64
Verifying : libpng-2:1.6.37-10.amzn2023.0.6.x86_64
Verifying : libxcb-1.17.0-1.amzn2023.0.1.x86_64
Verifying : pixman-0.43.4-1.amzn2023.0.4.x86_64
Verifying : xml-common-0.6.3-56.amzn2023.0.2.noarch
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```

```

Installed:
alsa-lib-1.2.7.2-1.amzn2023.0.2.x86_64
dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch
fonts-filesystem-1:0.0.5-12.amzn2023.0.2.noarch
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
libXau-1.0.11-6.amzn2023.0.1.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
libxcb-1.17.0-1.amzn2023.0.1.x86_64
pixman-0.43.4-1.amzn2023.0.4.x86_64
xml-common-0.6.3-56.amzn2023.0.2.noarch

Verifying:
alsalib-1.2.7.2-1.amzn2023.0.2.x86_64
dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch
fonts-filesystem-1:0.0.5-12.amzn2023.0.2.noarch
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
libXau-1.0.11-6.amzn2023.0.1.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
libxcb-1.17.0-1.amzn2023.0.1.x86_64
pixman-0.43.4-1.amzn2023.0.4.x86_64
xml-common-0.6.3-56.amzn2023.0.2.noarch

Complete!
[ec2-user@ip-172-31-42-155 ~]$ java --version
openjdk 17.0.12 2024-07-16 LTS
OpenJDK Runtime Environment Corretto-17.0.12.7.1 (build 17.0.12+7-LTS)
OpenJDK 64-bit Server VM Corretto-17.0.12.7.1 (build 17.0.12+7-LTS, mixed mode, sharing)
[ec2-user@ip-172-31-42-155 ~]$ 
```

## Step 6:

Run the following commands:

```

sudo yum install Jenkins
sudo systemctl status jenkins
sudo systemctl enable jenkins
sudo systemctl status jenkins
sudo systemctl start jenkins
sudo systemctl status jenkins

```

```

ec2-user@ip-172-31-42-155:~-
Verifying : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
Verifying : libX11-1.8.10-2.amzn2023.0.1.x86_64
Verifying : libXau-1.8.10-2.amzn2023.0.1.noarch
Verifying : libXcursor-0.4.11-6.amzn2023.0.1.x86_64
Verifying : libXext-1.3.6-1.amzn2023.0.1.x86_64
Verifying : libXrender-0.9.11-6.amzn2023.0.1.x86_64
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64
Verifying : libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64
Verifying : libpng-2:1.6.37-10.amzn2023.0.6.x86_64
Verifying : libxcb-1.17.0-1.amzn2023.0.1.x86_64
Verifying : pixman-0.43.4-1.amzn2023.0.4.x86_64
Verifying : xml-common-0.6.3-56.amzn2023.0.2.noarch
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```

```

Installed:
alsa-lib-1.2.7.2-1.amzn2023.0.2.x86_64
dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch
fonts-filesystem-1:0.0.5-12.amzn2023.0.2.noarch
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
libXau-1.0.11-6.amzn2023.0.1.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
libxcb-1.17.0-1.amzn2023.0.1.x86_64
pixman-0.43.4-1.amzn2023.0.4.x86_64
xml-common-0.6.3-56.amzn2023.0.2.noarch

Verifying:
alsalib-1.2.7.2-1.amzn2023.0.2.x86_64
dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch
fonts-filesystem-1:0.0.5-12.amzn2023.0.2.noarch
google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch
java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64
langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch
libXau-1.0.11-6.amzn2023.0.1.x86_64
libbrotli-1.0.9-4.amzn2023.0.2.x86_64
libxcb-1.17.0-1.amzn2023.0.1.x86_64
pixman-0.43.4-1.amzn2023.0.4.x86_64
xml-common-0.6.3-56.amzn2023.0.2.noarch

Complete!
[ec2-user@ip-172-31-42-155 ~]$ java --version
openjdk 17.0.12 2024-07-16 LTS
OpenJDK Runtime Environment Corretto-17.0.12.7.1 (build 17.0.12+7-LTS)
OpenJDK 64-bit Server VM Corretto-17.0.12.7.1 (build 17.0.12+7-LTS, mixed mode, sharing)
[ec2-user@ip-172-31-42-155 ~]$ sudo yum install jenkins
Last metadata expiration check: 0:05:12 ago on Fri Oct 18 15:12:06 2024.
Dependencies resolved.
-----  


| Package | Architecture | Version     | Repository | Size |
|---------|--------------|-------------|------------|------|
| jenkins | noarch       | 2.462.3-1.1 | jenkins    | 89 M |


-----  

Transaction Summary
Install 1 Package  

Total download size: 89 M
Installed size: 89 M
Is this ok [y/N]: y
Downloading Packages:
jenkins-2.462.3-1.1.noarch.rpm
Preparing...
Running scriptlet: jenkins-2.462.3-1.1.noarch
Installing : jenkins-2.462.3-1.1.noarch
Running scriptlet: jenkins-2.462.3-1.1.noarch
Verifying : jenkins-2.462.3-1.1.noarch
Installed: jenkins-2.462.3-1.1.noarch
Complete!
[ec2-user@ip-172-31-42-155 ~]$ 
```

```

ec2-user@ip-172-31-42-155:~-
=====
                         Architecture          Version           Repository          Size
=====
Package                noarch             2.462.3-1.1      jenkins
=====
Installing: Jenkins
=====
Transaction Summary
=====
Install 1 Package
=====
Total download size: 89 M
Installed size: 89 M
Is this ok [y/N]: y
Downloaded Packages:
jenkins-2.462.3-1.1.noarch.rpm
=====
Total: 13 MB/s | 89 MB 00:06
=====
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing : 1/1
  Running scriptlet: jenkins-2.462.3-1.1.noarch 1/1
  Installing : jenkins-2.462.3-1.1.noarch 1/1
  Running scriptlet: jenkins-2.462.3-1.1.noarch 1/1
  Verifying   : jenkins-2.462.3-1.1.noarch 1/1
=====
Installed:
  jenkins-2.462.3-1.1.noarch
=====
Complete!
[ec2-user@ip-172-31-42-155 ~]$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; disabled; preset: disabled)
    Active: inactive (dead)
[ec2-user@ip-172-31-42-155 ~]$ sudo systemctl enable jenkins
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
[ec2-user@ip-172-31-42-155 ~]$ sudo systemctl status jenkins
● Jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: disabled)
    Active: inactive (dead)
Main PID: 28188 (java)
  Tasks: 4 (limit: 1112)
    Memory: 3277M
      CPU: 14.868s
      CGroup: /system.slice/jenkins.service
           └─28188 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080
Oct 18 15:22:22 ip-172-31-42-155.ec2.internal jenkins[28188]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Oct 18 15:22:22 ip-172-31-42-155.ec2.internal jenkins[28188]: ****
Oct 18 15:22:22 ip-172-31-42-155.ec2.internal jenkins[28188]: ****
Oct 18 15:22:22 ip-172-31-42-155.ec2.internal jenkins[28188]: ****
Oct 18 15:22:28 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:28.706+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
Oct 18 15:22:28 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:28.730+0000 [id=24] INFO hudson.lifecycle.Lifecycle$OnReady: Jenkins is fully up and running
Oct 18 15:22:28 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:28.730+0000 [id=24] INFO hudson.util.Retryer$Start: Jenkins is fully up and running
Oct 18 15:22:28 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:28.824+0000 [id=47] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file for hudson.tasks.Maven
Oct 18 15:22:28 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:28.825+0000 [id=47] INFO hudson.util.Retryer$Start: Performed the action check updates server successfully at the ats
Oct 18 15:22:33 ip-172-31-42-155.ec2.internal jenkins[28188]: 2024-10-18 15:22:33.834+0000 [id=62] WARNING h.n.DiskSpaceMonitorDescriptor#markNodeOfflineOrOnline: Making Built-in Node offline tem
Lines 1-20/20 (END)

```

## Step 7:

Now, go to EC2 dashboard and select Jenkins server and copy its public address and visit <http://<public-address>:8080>

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity, and Reservations. Below that is another sidebar for Images, AMIs, and AMI Catalog. Further down are sections for Elastic Block Store, Network & Security, and Network & Security. At the bottom are CloudShell and Feedback buttons.

The main area displays a table of instances. The JenkinsServer instance (with ID i-05f12961a9cf8cf3e) is selected and highlighted in blue. Its details are shown in a modal window below:

- Details:**
  - Public IPv4 address copied:** 98.80.223.40 (with a link to open address)
  - Instance summary:**
    - Instance ID: i-05f12961a9cf8cf3e (JenkinsServer)
    - IPv6 address: -
    - Hostname type: IP name: ip-172-31-42-86.ec2.internal
    - Answer private resource DNS name: -
  - Public IPv4 DNS:** ec2-98-80-223-40.compute-1.amazonaws.com (with a link to open address)
  - Private IP4 addresses:** 172.31.42.86
  - Private IP4 DNS:** ip-172-31-42-86.ec2.internal
  - Instance type:** t2.micro
  - Status check:** 2/2 checks passed
  - Alarm status:** +
  - Availability Zone:** us-east-1a
  - Public IP:** ec2-98-80-223-40
- SonarQubeServer** instance (with ID i-061f29e11e3fa1a8b) is also listed with its details.

## Step 8:

You will be redirected to this page on successful installation of Jenkins and visiting the public address url with port 8080.

← ⌂ Not secure | 98.80.223.40:8080/login?from=%2F

Getting Started

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

`/var/lib/jenkins/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

**Administrator password**

Continue

## **Step 9:**

Now, come back to gitbash run the command

```
sudo more /var/lib/jenkins/secrets/initialAdminPassword
```

And, copy the content in the output and paste it in the input of Administrator password.

```
ec2-user@ip-172-31-42-86:~$ aliases: install-n, install-na, install-nevra  
[ec2-user@ip-172-31-42-86 ~]$ sudo yum install client_loop: send disconnect: Connection reset by peer  
user@DESKTOP-00GK15A MINGW64 ~/Downloads (master)  
$ ssh -i "Am Jenkins.pem" ec2-user@ec2-98-80-223-40.compute-1.amazonaws.com  
Last login: Sat Oct 19 16:16:22 2024 from 49.36.105.96  
.  
~~ \####_ Amazon Linux 2  
~~ \###\ AL2 End of Life is 2025-06-30.  
~~ \#/ V--> A newer version of Amazon Linux is available!  
~~ \/_/ Amazon Linux 2023, GA and supported until 2028-03-15.  
~~ /m/ https://aws.amazon.com/linux/amazon-linux-2023/  
  
[ec2-user@ip-172-31-42-86 ~]$ sudo dnf install java-17-amazon-corretto-devel  
sudo: dnf: command not found  
[ec2-user@ip-172-31-42-86 ~]$ sudo yum install java-17-amazon-corretto-devel  
[ec2-user@ip-172-31-42-86 ~]$ sudo yum install java-17-amazon-corretto-devel  
loading plugins: extras_suggestions, langpacks, priorities, update-motd  
amzn2-core  
Package 1:java-17-amazon-corretto-devel-17.0.12+7-1.amzn2.1.x86_64 already installed and latest version  
Nothing to do  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl status jenkins  
sudo: systemctl: command not found  
[ec2-user@ip-172-31-42-86 ~]$ systemctl status jenkins  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl status jenkins  
● jenkins.service - Jenkins Continuous Integration Server  
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; disabled; vendor preset: disabled)  
  Active: inactive (dead)  
    Process: 11864 ExecStart=/usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=%C/jenkins/war --httpPort=8080  
Failed to execute operation: No such file or directory  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl enable jenkins  
Created symlink from /etc/systemd/system/multi-user.target.wants/jenkins.service to /usr/lib/systemd/system/jenkins.service.  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl status jenkins  
● jenkins.service - Jenkins Continuous Integration Server  
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)  
  Active: inactive (dead)  
    Process: 11864 ExecStart=/usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=%C/jenkins/war --httpPort=8080  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl start jenkins  
[ec2-user@ip-172-31-42-86 ~]$ sudo systemctl status jenkins  
● jenkins.service - Jenkins Continuous Integration Server  
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)  
  Active: active (running) since Sat 2024-10-19 16:37:17 UTC; 10s ago  
Main PID: 13065 (java)  
  CGroup: /system.slice/jenkins.service  
          └─13065 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=%C/jenkins/war --httpPort=8080  
  
Oct 19 16:37:10 ip-172-31-42-86.ec2.internal jenkins[13065]: 174b824d318f4465830fc5b5bf39ff2  
Oct 19 16:37:10 ip-172-31-42-86.ec2.internal jenkins[13065]: This is Jenkins 2.372.1 at: /var/lib/jenkins/secrets/initialAdminPassword  
Oct 19 16:37:10 ip-172-31-42-86.ec2.internal jenkins[13065]: ****  
Oct 19 16:37:10 ip-172-31-42-86.ec2.internal jenkins[13065]: ****  
Oct 19 16:37:10 ip-172-31-42-86.ec2.internal jenkins[13065]: ****  
Oct 19 16:37:17 ip-172-31-42-86.ec2.internal jenkins[13065]: 2024-10-19 16:37:17.478+0000 [id:32] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization  
Oct 19 16:37:17 ip-172-31-42-86.ec2.internal jenkins[13065]: 2024-10-19 16:37:17.516+0000 [id:24] INFO hudson.lifecycle.lifecycle#onReady: Jenkins is fully up and running  
Oct 19 16:37:17 ip-172-31-42-86.ec2.internal systemd[1]: Started Jenkins Continuous Integration Server.  
Oct 19 16:37:17 ip-172-31-42-86.ec2.internal jenkins[13065]: 2024-10-19 16:37:17.584+0000 [id:48] INFO h.m.DownloadService$Downloadable#load: Obtained the updated data file for huds...venInstaller  
Oct 19 16:37:17 ip-172-31-42-86.ec2.internal jenkins[13065]: 2024-10-19 16:37:17.584+0000 [id:48] INFO hudson.util.Retrier#start: Performed the action check updates server successfully attempt #1  
hudson.util.Retrier#start: Performed the action check updates server successfully attempt #1  
[ec2-user@ip-172-31-42-86 ~]$ more /var/lib/jenkins/secrets/initialAdminPassword  
[ec2-user@ip-172-31-42-86 ~]$  
[ec2-user@ip-172-31-42-86 ~]$  
[ec2-user@ip-172-31-42-86 ~]$
```

Not secure | 98.80.223.40:8080/login?from=%2F

## Getting Started

# Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

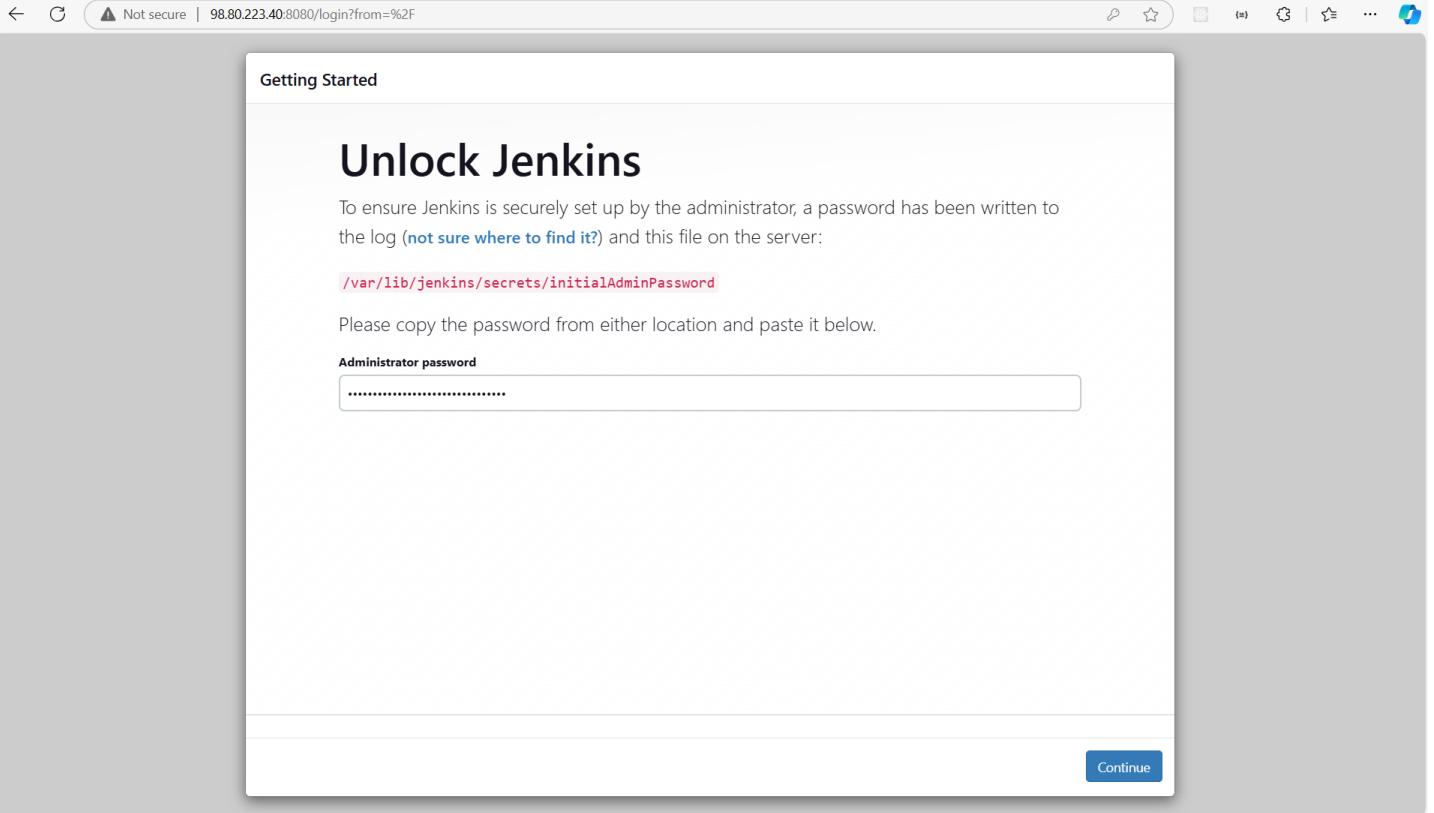
`/var/lib/jenkins/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

**Administrator password**

.....

**Continue**



### Step 10:

Select install suggested plugins and complete the installation and initial configurations.

Not secure | 98.80.223.40:8080

## Getting Started

# Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

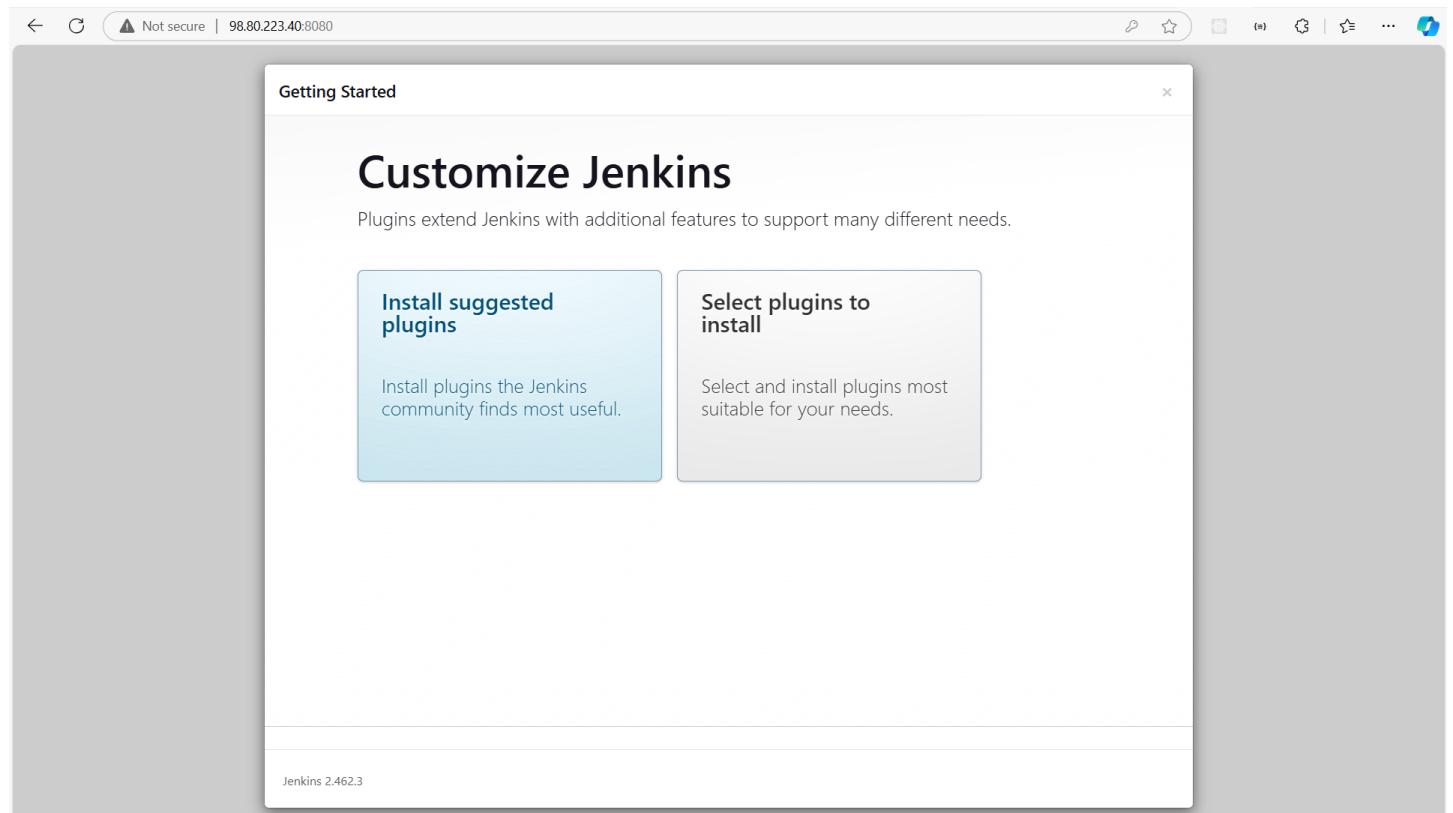
**Install suggested plugins**

Install plugins the Jenkins community finds most useful.

**Select plugins to install**

Select and install plugins most suitable for your needs.

Jenkins 2.462.3



Not secure | 98.80.223.40:8080

## Getting Started

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding
✓ Timestamper	⌚ Workspace Cleanup	⌚ Ant	⌚ Gradle
⌚ Pipeline	⌚ GitHub Branch Source	⌚ Pipeline: GitHub Groovy Libraries	⌚ Pipeline Graph View
⌚ Git	⌚ SSH Build Agents	⌚ Matrix Authorization Strategy	⌚ PAM Authentication
⌚ LDAP	⌚ Email Extension	⌚ Mailer	⌚ Dark Theme

Ionicons API  
Folders  
OWASP Markup Formatter  
\*\* ASH API  
\*\* JSON Path API  
\*\* Structs  
\*\* Pipeline: Step API  
\*\* Token Macro  
**Build Timeout**  
\*\* poureycastle API  
\*\* Credentials  
\*\* Pipeline Credentials  
\*\* Variant  
\*\* SSH Credentials  
**Credentials Binding**  
\*\* SCM API  
\*\* Pipeline: API  
\*\* commons-lang3 v3.x Jenkins API  
**Timestamper**  
\*\* Geforce API  
\*\* Script Security  
\*\* JavaBeans Activation Framework (JAF) API  
\*\* JAXB  
\*\* SnakeYAML API  
\*\* JSON API  
\*\* Jackson 2 API  
\*\* - required dependency

Jenkins 2.462.3

Not secure | 98.80.223.40:8080

## Getting Started

# Create First Admin User

Username

Password

Confirm password

Full name

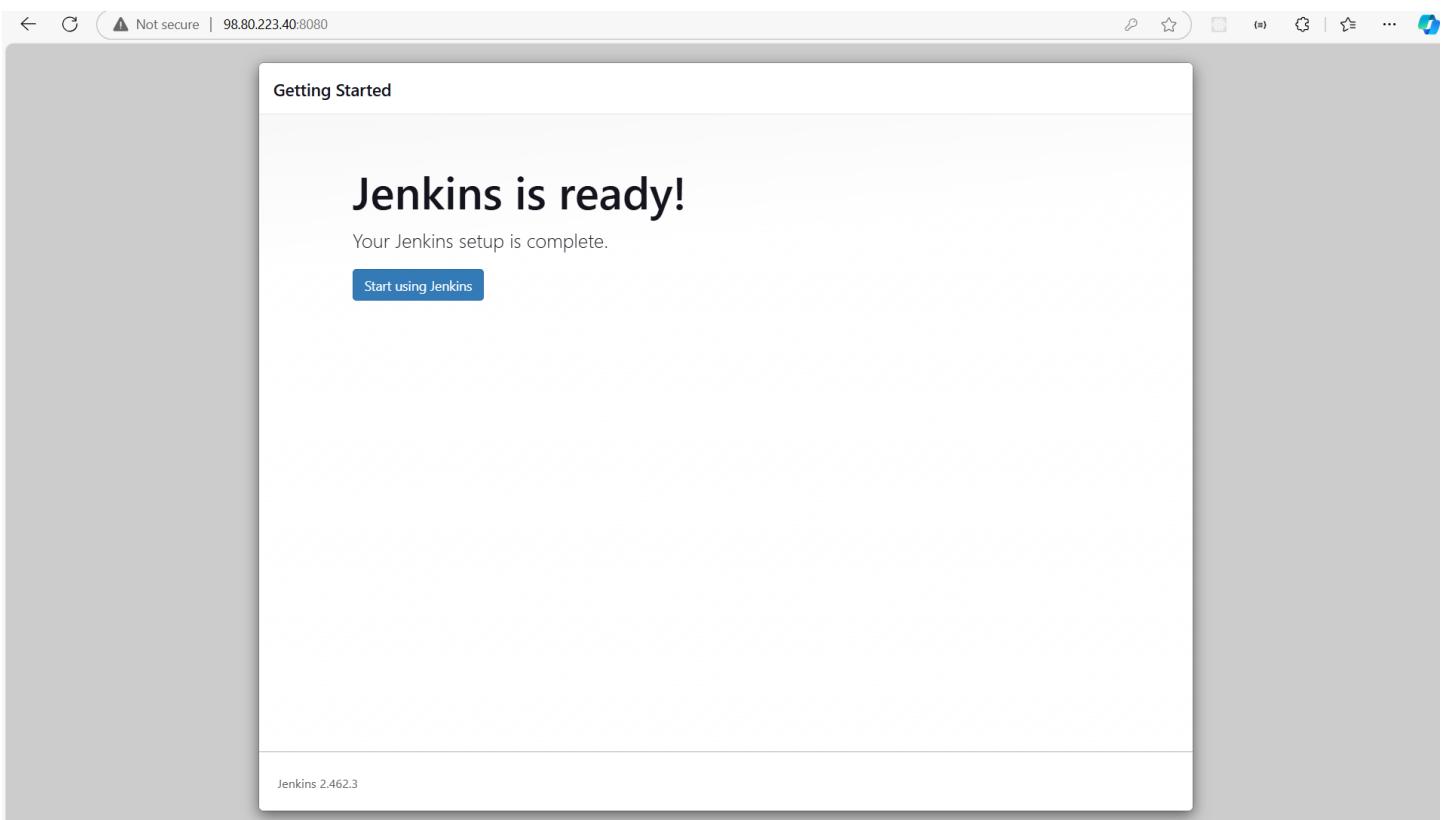
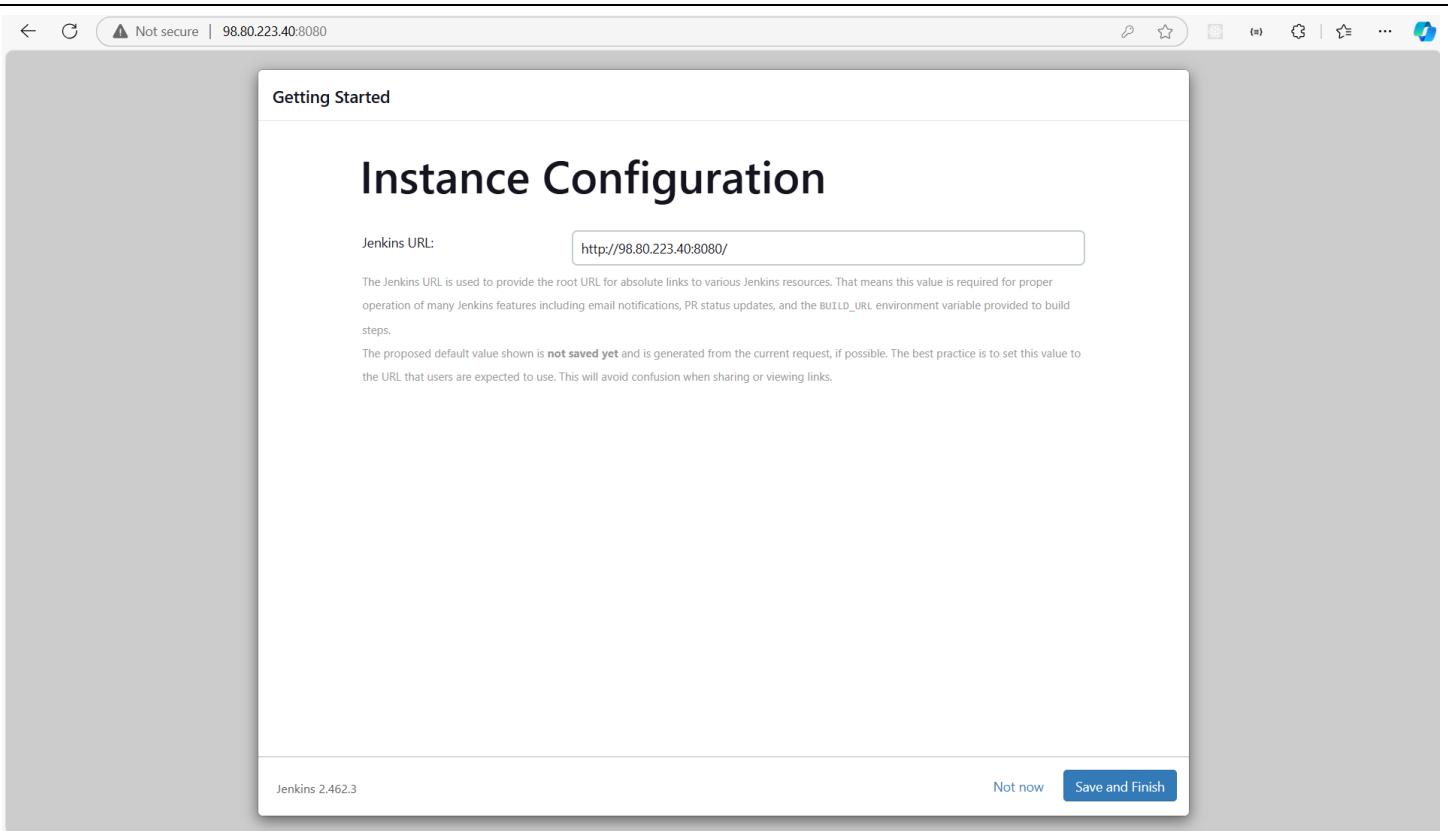
E-mail address

Jenkins 2.462.3

Skip and continue as admin

Save and Continue

Password: Anuprita@4321



### Step 11:

After proper initial configuration you will be redirected to this page.

The screenshot shows the Jenkins dashboard at the URL <http://98.80.223.40:8080>. The top navigation bar includes a 'Not secure' warning, the IP address, and user information for 'Anuprita'. The main content area features a 'Welcome to Jenkins!' message and a 'Start building your software project' section. On the left, there are sections for 'Build Queue' (empty), 'Build Executor Status' (2 Idle), 'Create a job' (button with '+'), 'Set up a distributed build' (with 'Set up an agent' and 'Configure a cloud' options), and a link to 'Learn more about distributed builds'. The bottom right corner shows 'REST API' and 'Jenkins 2.46.3'.

## Step 12:

Install more plugins which will be required for this experiment.

- a. SonarQube Scanner
- b. Pipeline: Stage View

The screenshot shows the 'Manage Jenkins' page at the URL <http://98.80.223.40:8080/manage/>. The top navigation bar includes a 'Not secure' warning, the IP address, and user information for 'Anuprita'. The main content area features a 'Manage Jenkins' header and a 'System Configuration' section. A prominent red warning box states: 'Building on the built-in node can be a security issue. You should set up distributed builds. See [the documentation](#)'. It also mentions: 'You are running Jenkins on Amazon Linux 2. Jenkins stopped supporting Amazon Linux 2 as of 2023-11-16. Please upgrade to a supported operating system. Refer to [the documentation](#) for details.' Buttons for 'More Info' and 'Ignore' are present. Below this, the 'System Configuration' section includes links for 'System', 'Tools', 'Plugs', 'Nodes', 'Clouds', and 'Appearance'.

Not secure | 98.80.223.40:8080/manage/pluginManager/available

## Plugins

Search: sonarqube

Install Name ↓ Released

	Name	Released
<input checked="" type="checkbox"/>	SonarQube Scanner 2.17.2 External Site/Tool Integrations Build Reports This plugin allows an easy integration of SonarQube, the open source platform for Continuous Inspection of code quality.	8 mo 3 days ago
<input type="checkbox"/>	Sonar Gerrit 388.v9b_f1cb_e42306 External Site/Tool Integrations This plugin allows to submit issues from SonarQube to Gerrit as comments directly.	4 mo 17 days ago
<input type="checkbox"/>	SonarQube Generic Coverage 1.0 TODO	5 yr 2 mo ago

Updates Available plugins Installed plugins Advanced settings Download progress REST API Jenkins 2.462.3

Not secure | 98.80.223.40:8080/manage/pluginManager/available

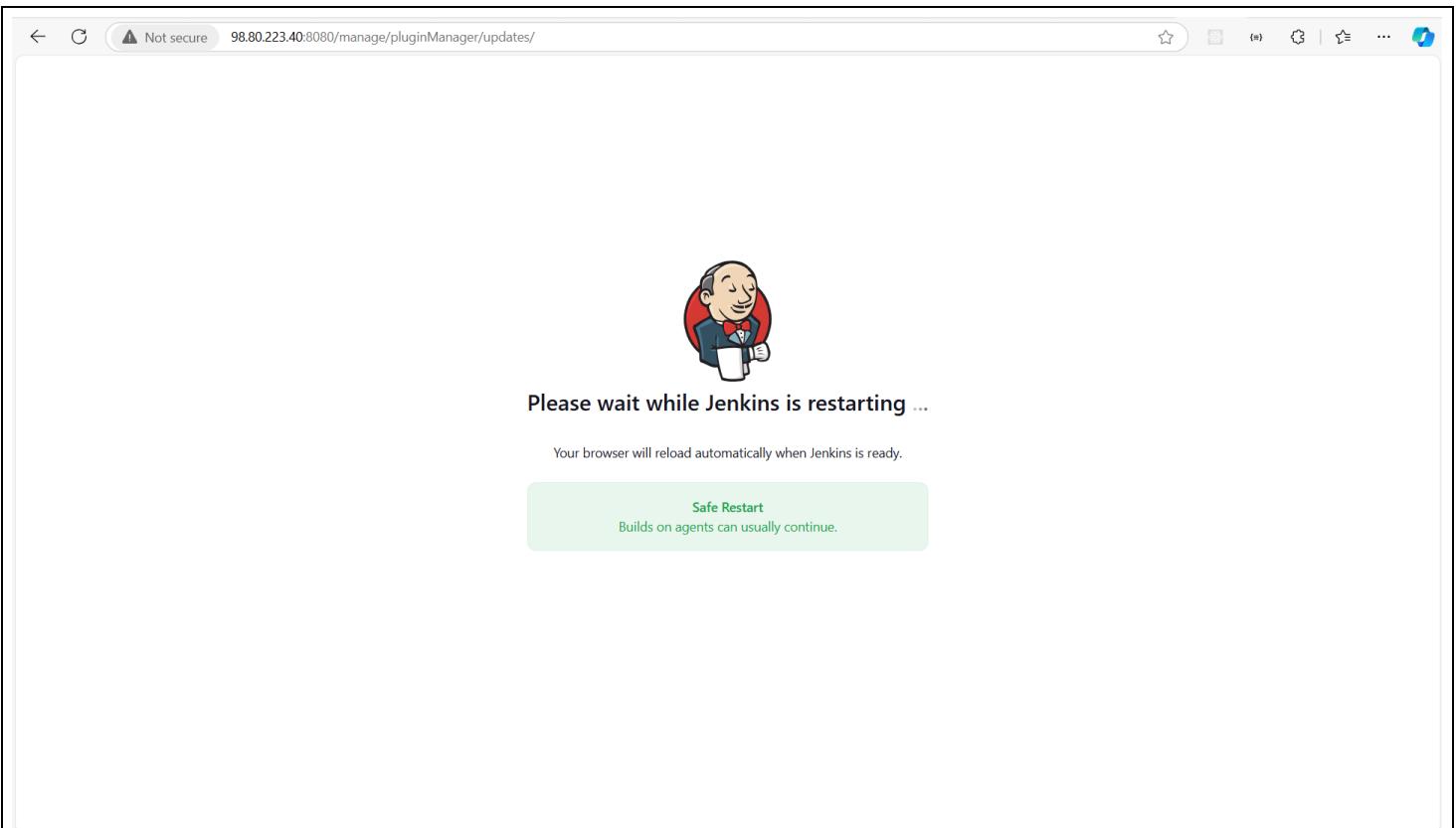
## Plugins

Search: pipeline

Install Name ↓ Released

	Name	Released
<input type="checkbox"/>	Pipeline: REST API 2.34 User Interface Provides a REST API to access pipeline and pipeline run data.	11 mo ago
<input checked="" type="checkbox"/>	Pipeline: Stage View 2.34 User Interface Pipeline Stage View Plugin.	11 mo ago
<input type="checkbox"/>	Docker Pipeline 580.vc0c340686b_54 pipeline DevOps Deployment docker Build and use Docker containers from pipelines.	5 mo 0 days ago
<input type="checkbox"/>	Lockable Resources 1320.v1f0dff578476 pipeline Cluster Management Agent Management This plugin allows to define external resources (such as printers, phones, computers) that can be locked by builds. If a build requires an external resource which is already locked, it will wait for the resource to be free.	3 days 22 hr ago
<input type="checkbox"/>	Pipeline: Deprecated Groovy Libraries 612.v55f2f80781ef Miscellaneous Hosting of Pipeline Groovy libraries inside a Jenkins Git server. <b>Deprecated</b> . Use <a href="#">Pipeline: Groovy Libraries</a> instead. If you see this plugin installed just because you upgraded, you can probably uninstall it now. This plugin should only be used if you have historically pushed libraries to a Git server inside Jenkins.	9 mo 4 days ago

Updates Available plugins Installed plugins Advanced settings Download progress REST API Jenkins 2.462.3



### Step 13:

Go to Manage Jenkins > Tools. Scroll down to SonarQube Scanner installations and add the SonarQube Scanner and then click on the save button.

A screenshot of the Jenkins Manage Jenkins &gt; Tools page. The URL is 98.80.223.40:8080/manage/configureTools/. The page shows the "SonarQube Scanner installations" section. A form is open for adding a new installation. It has a "Name" field containing "sonarqube" and a checked "Install automatically" checkbox. Under "Install from Maven Central", the "Version" dropdown is set to "SonarQube Scanner 6.2.1.4610". There are "Save" and "Apply" buttons at the bottom.

### Sonarqube installation

Reference video: <https://www.youtube.com/watch?v=E5hMOGeBT-o&t=38s>

### Step 1:

Click on the SonarQubeServer and click on connect.

Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
JenkinsServer	i-05f12961a9cf8cf3e	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-98-80-223-40.compute-1.amazonaws.com
SonarQubeServer	i-061f29e11e3fa1a8b	Running	t2.medium	2/2 checks passed	View alarms +	us-east-1c	ec2-54-210-13-192.compute-1.amazonaws.com

**i-061f29e11e3fa1a8b (SonarQubeServer)**

**Details** Status and alarms Monitoring Security Networking Storage Tags

**Instance summary**

Instance ID	Public IPv4 address	Private IPv4 addresses
i-061f29e11e3fa1a8b (SonarQubeServer)	54.210.13.192   open address	172.31.92.157
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-54-210-13-192.compute-1.amazonaws.com   open address
Hostname type	Private IP DNS name (IPv4 only)	Elastic IP addresses
IP name: ip-172-31-92-157.ec2.internal	ip-172-31-92-157.ec2.internal	
Answer private resource DNS name	Instance type	
	t2.medium	

EC2 Instance Connect Session Manager **SSH client** EC2 serial console

Instance ID: i-061f29e11e3fa1a8b (SonarQubeServer)

1. Open an SSH client.  
2. Locate your private key file. The key used to launch this instance is AMsonarqube.pem  
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
chmod 400 "AMsonarqube.pem"  
4. Connect to your instance using its Public DNS:  
ec2-54-210-13-192.compute-1.amazonaws.com

Example:  
ssh -i "AMsonarqube.pem" ec2-user@ec2-54-210-13-192.compute-1.amazonaws.com

**Note:** In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel

## Step 2:

Open Git Bash and go to the directory which has the Key downloaded. If you don't have the key downloaded, create a key pair and download the .pem file for the key.

Since, I have the key downloaded in Downloads directory, I used the following commands:

```
cd Download
```

```
dir AMsonarqube.pem*
```

```
ssh -i "AMsonarqube.pem" ec2-user@ec2-98-80-223-40.compute-1.amazonaws.com
```

```

ec2-user@ip-172-31-92-157:~$ user@DESKTOP-QOGK15A MINGW64 ~ (master)
$ cd Downloads
User@DESKTOP-QOGK15A MINGW64 ~/Downloads (master)
$ dir AMsonarqube.pem
AMsonarqube.pem

User@DESKTOP-QOGK15A MINGW64 ~/Downloads (master)
$ ssh -i "AMsonarqube.pem" ec2-user@ec2-54-210-13-192.compute-1.amazonaws.com
The authenticity of host 'ec2-54-210-13-192.compute-1.amazonaws.com (54.210.13.192)' can't be established.
ED25519 key fingerprint is SHA256:1np8giuh0tDBAUdn0AcPzQhmxvwHRxx1skaiTxQQ.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
warning: Permanently added 'ec2-54-210-13-192.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

  _\###_
  ~\_\###_
  ~~ \### AL2 End of Life is 2025-06-30.
  ~~ \#/
  ~~ V-'-->
  ~~ / A newer version of Amazon Linux is available!
  ~~ /_/
  _/`_/
  /m/ Amazon Linux 2023, GA and supported until 2028-03-15.
  https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-92-157 ~]$ sudo wget -O /etc/yum.repos.d/sonar.repo http://downloads.sourceforge.net/project/sonar-pkg/rpm/sonar.repo
--2024-10-19 16:56:06 -- http://downloads.sourceforge.net/project/sonar-pkg/rpm/sonar.repo
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 204.68.111.105
Connecting to downloads.sourceforge.net (downloads.sourceforge.net)|204.68.111.105|:80... connected.
HTTP request sent, awaiting response... 302 Found
Location: http://psychz.dl.sourceforge.net/project/sonar-pkg/rpm/sonar.repo?viasf=1 [following]
--2024-10-19 16:56:06 -- http://psychz.dl.sourceforge.net/project/sonar-pkg/rpm/sonar.repo?viasf=1
Resolving psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)... 208.87.241.191
Connecting to psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)|208.87.241.191|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 93 [application/octet-stream]
Saving to: '/etc/yum.repos.d/sonar.repo'

100%[=====] 93 --.-K/s in 0s

2024-10-19 16:56:07 (16.7 MB/s) - '/etc/yum.repos.d/sonar.repo' saved [93/93]

[ec2-user@ip-172-31-92-157 ~]$ sudo yum install sonar -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
sonar
sonar/primary_db
Resolving Dependencies
--> Running transaction check
--> Package sonar.noarch 0:7.1-1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package           Arch      Version       Repository   Size
=====
Installing:
sonar            noarch    7.1-1         sonar        142 M
Transaction Summary
Install 1 Package

Install 1 Package

```

### Step 3:

Now, in order to install java run the following commands:

```

sudo su
sudo yum install java-17-amazon-corretto-headless
sudo yum install java-17-amazon-corretto
sudo dnf install java-17-amazon-corretto-devel

```

```

ec2-user@ip-172-31-42-155:~$ user@DESKTOP-QOGK15A MINGW64 ~/Downloads (master)
$ ssh -i "AMjenkins.pem" ec2-user@ec2-54-91-87-54.compute-1.amazonaws.com
  _\###_
  ~\_\###_
  ~~ \### Amazon Linux 2023
  ~~ \#/
  ~~ V-'-->
  ~~ / A newer version of Amazon Linux is available!
  ~~ /_/
  _/`_/
  /m/ https://aws.amazon.com/linux/amazon-linux-2023

Last login: Fri Oct 18 14:57:44 2024 From 49.36.105.208
[ec2-user@ip-172-31-42-155 ~]$ sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2024-10-18 15:11:26 -- https://pkg.jenkins.io/redhat-stable/jenkins.repo
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.34.133, 2a04:4e42:78::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.34.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

/etc/yum.repos.d/jenkins.repo          100%[=====] 85 --.-KB/s in 0s

2024-10-18 15:11:26 (3.60 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]

[ec2-user@ip-172-31-42-155 ~]$ sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[ec2-user@ip-172-31-42-155 ~]$ yum install fontconfig java-17-openjdk
Error: This command has to be run with superuser privileges (under the root user on most systems).
[ec2-user@ip-172-31-42-155 ~]$ sudo yum install fontconfig java-17-openjdk
Jenkins-stable
No match for argument: java-17-openjdk
Error: Unable to find a match: java-17-openjdk
[ec2-user@ip-172-31-42-155 ~]$ sudo dnf install java-17-amazon-corretto-devel
Last metadata expiration check: 0:02:40 ago on Fri Oct 18 15:12:06 2024.
Dependencies resolved.

=====
Package           Architecture      Version       Repository   Size
=====
Installing:
java-17-amazon-corretto-devel        x86_64        1:17.0.12-7.1.amzn2023.1   amazonlinux   142 k
Installing dependencies:
alsa-lib                          x86_64        1.2.7.2-1.amzn2023.0.2   amazonlinux   504 k
cairo                            x86_64        1.17.6-2.amzn2023.0.1   amazonlinux   684 k
dejavu-sans-fonts                 noarch      2.37-16.amzn2023.0.2   amazonlinux   1.3 M
dejavu-sans-mono-fonts              noarch      2.37-16.amzn2023.0.2   amazonlinux   467 k
dejavu-serif-fonts                 noarch      2.37-13.amzn2023.0.2   amazonlinux   0 M
fontconfig                        x86_64        2.13.94-2.amzn2023.0.2   amazonlinux   273 k
fontconfigfilesystem                noarch      1.2.0.5-17.amzn2023.0.2   amazonlinux   9.5 k
freetype                           x86_64        2.13.2-5.amzn2023.0.1   amazonlinux   423 k
google-noto-fonts-common           noarch      20201206-2.amzn2023.0.2   amazonlinux   15 k
google-noto-sans-vf-fonts           noarch      20201206-2.amzn2023.0.2   amazonlinux   492 k
graphite2                         x86_64        1.3.14-7.amzn2023.0.2   amazonlinux   97 k
harfbuzz                           x86_64        7.0.0-2.amzn2023.0.1   amazonlinux   868 k
java-17-amazon-corretto-headless  x86_64        1:17.0.12-7-1.amzn2023.1   amazonlinux   91 M
javapackages-filesystem             noarch      6.0.0-0.7.amzn2023.0.6   amazonlinux   12 k
langpacks-core-fonts                 noarch      3.0-21.amzn2023.0.4   amazonlinux   10 k
libX11                             x86_64        1.6.9-10.amzn2023.0.1   amazonlinux   659 k
libX11-common                       x86_64        1.6.8-10.amzn2023.0.1   amazonlinux   147 k
libXau                            x86_64        1.0.0-11-6.amzn2023.0.1   amazonlinux   33 k
libXext                            x86_64        1.3.6-6.amzn2023.0.1   amazonlinux   42 k
libXrender                          x86_64        0.9.11-6.amzn2023.0.1   amazonlinux   29 k
libBrotli                           x86_64        1.0.9-4.amzn2023.0.2   amazonlinux   315 k
libjpeg-turbo                        x86_64        2.1.4-2.amzn2023.0.5   amazonlinux   190 k
libpng                            x86_64        2:1.6.37-10.amzn2023.0.6  amazonlinux   128 k

```

```

ec2-user@ip-172-31-42-155:~$ Transaction Summary
=====  

Install 27 Packages  

Total download size: 100 M  

Installed size: 261 M  

Is this ok [y/N]: y  

Downloading Packages:  

(1/27): cairo-1.17.6-2.amzn2023.0.1.x86_64.rpm  

(2/27): dejavu-sans-fonts-2.37-16.amzn2023.0.2.noarch.rpm  

(3/27): alsalib-1.2.7-2.1.amzn2023.0.2.x86_64.rpm  

(4/27): dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch.rpm  

(5/27): fonts-filesystem-1.0.5-12.amzn2023.0.2.noarch.rpm  

(6/27): fontconfig-2.13.94-2.amzn2023.0.2.noarch.rpm  

(7/27): fontconfig-2.13.94-2.amzn2023.0.2.x86_64.rpm  

(8/27): google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch.rpm  

(9/27): graphite2-1.3.14-7.amzn2023.0.2.x86_64.rpm  

(10/27): freetype-2.13.2-5.amzn2023.0.1.x86_64.rpm  

(11/27): harfbuzz-7.0-0.2.amzn2023.0.1.x86_64.rpm  

(12/27): google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch.rpm  

(13/27): java-17-amazon-corretto-devel-17.0.12+7-1.amzn2023.1.x86_64.rpm  

(14/27): javapackages-fsitem-6.0.0-7.amzn2023.0.6.noarch.rpm  

(15/27): langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch.rpm  

(16/27): libX11-1.8.10-2.amzn2023.0.1.x86_64.rpm  

(17/27): libX11-common-1.8.10-2.amzn2023.0.1.noarch.rpm  

(18/27): libXext-1.3.6-1.amzn2023.0.2.x86_64.rpm  

(19/27): libXext-1.3.6-1.amzn2023.0.1.x86_64.rpm  

(20/27): libXrender-0.9.11-6.amzn2023.0.1.x86_64.rpm  

(21/27): libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64.rpm  

(22/27): libbrotli-1.0.9-4.amzn2023.0.2.x86_64.rpm  

(23/27): libpng-1.6.37-10.amzn2023.0.6.x86_64.rpm  

(24/27): libxcb-1.17.0-1.amzn2023.0.1.x86_64.rpm  

(25/27): xml-common-0.6.3-56.amzn2023.0.2.noarch.rpm  

(26/27): pixman-0.43.4-1.amzn2023.0.4.x86_64.rpm  

(27/27): java-17-amazon-corretto-headless-17.0.12+7-1.amzn2023.1.x86_64.rpm  

Total 54 MB/s | 100 MB 00:01  

Running transaction check  

Transaction check succeeded.  

Running transaction test  

Transaction test succeeded.  

Running transaction  

Preparing : 1/1  

Installing : fonts-filesystem-1:2.0.5-12.amzn2023.0.2.noarch 1/27  

Installing : dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch 2/27  

Installing : dejavu-sans-fonts-2.37-16.amzn2023.0.2.noarch 3/27  

Installing : dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch 4/27  

Installing : fontconfig-2.13.94-2.amzn2023.0.2.noarch 5/27  

Running scriptlet: xml-common-0.6.3-56.amzn2023.0.2.noarch 6/27  

Installing : xml-common-0.6.3-56.amzn2023.0.2.noarch 7/27  

Installing : pixman-0.43.4-1.amzn2023.0.4.x86_64 8/27  

Installing : libjpeg-turbo-2.1.4-2.amzn2023.0.5.x86_64 9/27  

Installing : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 10/27  

Installing : libpng-1.6.37-10.amzn2023.0.6.x86_64 11/27  

Installing : libxcb-1.17.0-1.amzn2023.0.1.x86_64 12/27  

Installing : libX11-1.8.10-2.amzn2023.0.1.noarch 13/27  

Installing : libXext-1.3.6-1.amzn2023.0.1.x86_64 14/27  

Installing : libXrender-0.9.11-6.amzn2023.0.1.x86_64 15/27  

Installing : javapackages-fsitem-6.0.0-7.amzn2023.0.6.noarch 16/27  

Installing : graphite2-1.3.14-7.amzn2023.0.2.x86_64 17/27  

Installing : google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch 18/27  

Installing : google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch 19/27  

Installing : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch 20/27  

ec2-user@ip-172-31-42-155:~$  

Installing : libX11-1.8.10-2.amzn2023.0.1.x86_64 1/27  

Installing : libXext-1.3.6-1.amzn2023.0.1.x86_64 2/27  

Installing : libXrender-0.9.11-6.amzn2023.0.1.x86_64 3/27  

Installing : dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch 4/27  

Installing : dejavu-sans-fonts-2.37-16.amzn2023.0.2.noarch 5/27  

Installing : dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch 6/27  

Installing : fontconfig-2.13.94-2.amzn2023.0.2.x86_64 7/27  

Running scriptlet: xml-common-0.6.3-56.amzn2023.0.2.noarch 8/27  

Installing : graphite2-1.3.14-7.amzn2023.0.2.x86_64 9/27  

Installing : google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch 10/27  

Installing : google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch 11/27  

Installing : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch 12/27  

Running scriptlet: java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64 13/27  

Running scriptlet: java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64 14/27  

Installing : java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64 15/27  

Running scriptlet: java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64 16/27  

Running scriptlet: fontconfig-2.13.94-2.amzn2023.0.2.x86_64 17/27  

Running scriptlet: java-17-amazon-corretto-devel-1:17.0.12+7-1.amzn2023.1.x86_64 18/27  

Verifying : alsalib-1.2.7.2-2.1.amzn2023.0.2.x86_64 19/27  

Installing : alsalib-1.2.7.2-2.1.amzn2023.0.2.x86_64 20/27  

Running scriptlet: java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64 21/27  

Running scriptlet: java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64 22/27  

Verifying : dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch 23/27  

Verifying : dejavu-serif-fonts-2.37-16.amzn2023.0.2.noarch 24/27  

Verifying : fontconfig-2.13.94-2.amzn2023.0.2.x86_64 25/27  

Verifying : fonts-filesystem-1:2.0.5-12.amzn2023.0.2.noarch 26/27  

Verifying : freetype-2.13.2-5.amzn2023.0.1.x86_64 27/27  

Verifying : google-noto-fonts-common-20201206-2.amzn2023.0.2.noarch 28/27  

Verifying : google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch 29/27  

Verifying : langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch 30/27  

Verifying : libX11-1.8.10-2.amzn2023.0.1.x86_64 31/27  

Verifying : libXau-1.0.11-6.amzn2023.0.1.x86_64 32/27  

Verifying : libXext-1.3.6-1.amzn2023.0.1.x86_64 33/27  

Verifying : libXrender-0.9.11-6.amzn2023.0.1.x86_64 34/27  

Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 35/27  

Verifying : libpng-2.1.6.37-10.amzn2023.0.6.x86_64 36/27  

Verifying : libxcb-1.17.0-1.amzn2023.0.1.x86_64 37/27  

Verifying : pixman-0.43.4-1.amzn2023.0.4.x86_64 38/27  

Verifying : xml-common-0.6.3-56.amzn2023.0.2.noarch 39/27  

Installed:  

alsalib-1.2.7.2-2.1.amzn2023.0.2.x86_64  

dejavu-sans-mono-fonts-2.37-16.amzn2023.0.2.noarch  

fonts-filesystem-1:2.0.5-12.amzn2023.0.2.noarch  

google-noto-sans-vf-fonts-20201206-2.amzn2023.0.2.noarch  

java-17-amazon-corretto-headless-1:17.0.12+7-1.amzn2023.1.x86_64  

langpacks-core-font-en-3.0-21.amzn2023.0.4.noarch  

libXau-1.0.11-6.amzn2023.0.1.x86_64  

libbrotli-1.0.9-4.amzn2023.0.2.x86_64  

libxcb-1.17.0-1.amzn2023.0.1.x86_64  

Completed!  

[ec2-user@ip-172-31-42-155 ~]$ java --version  

openjdk 17.0.2 2024-07-16 LTS  

OpenJDK Runtime Environment Corretto-17.0.12.7.1 (build 17.0.12+7-LTS)  

OpenJDK 64-bit Server VM Corretto-17.0.12.7.1 (build 17.0.12+7-LTS, mixed mode, sharing)  

[ec2-user@ip-172-31-42-155 ~]$
```

## Step 4:

Now, run the following command to install sonarqube:

```
sudo wget -O /etc/yum.repos.d/sonar.repo http://downloads.sourceforge.net/project/sonar-pkg/rpm/sonar.repo  

sudo yum install sonar -y
```

```

ec2-user@ip-172-31-92-157:~$ cd Downloads
ec2-user@DESKTOP-QQGK15A MINGW64 ~ (master)
$ cd Downloads
ec2-user@DESKTOP-QQGK15A MINGW64 ~/Downloads (master)
$ dir AMsonarqube.pem
AMsonarqube.pem

User@DESKTOP-QQGK15A MINGW64 ~/Downloads (master)
$ ssh -i "AMsonarqube.pem" ec2-user@ec2-54-210-13-192.compute-1.amazonaws.com
The authenticity of host 'ec2-54-210-13-192.compute-1.amazonaws.com (54.210.13.192)' can't be established.
ED25519 key fingerprint is SHA256:1np8qisuh0tDBAUdn0AcPzQhmxvwHRxx1skaiTxQQ.
This key is not known by any other name.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
warning: Permanently added 'ec2-54-210-13-192.compute-1.amazonaws.com' (ED25519) to the list of known hosts.

  _\###_
 /#\###\ Amazon Linux 2
  ~~ \### AL2 End of Life is 2025-06-30.
  ~~ \#/ V~' ->
  ~~ A newer version of Amazon Linux is available!
  ~~ /_/_ Amazon Linux 2023, GA and supported until 2028-03-15.
  /m/  https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-92-157 ~]$ sudo wget -O /etc/yum.repos.d/sonar.repo http://downloads.sourceforge.net/project/sonar-pkg/rpm/sonar.repo
--2024-10-19 16:56:06 -- http://downloads.sourceforge.net/project/sonar-pkg/rpm/sonar.repo
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 204.68.111.105
Connecting to downloads.sourceforge.net (downloads.sourceforge.net)|204.68.111.105|:80... connected.
HTTP request sent, awaiting response... 200 OK
Location: http://psychz.dl.sourceforge.net/project/sonar-pkg/rpm/sonar.repo?viasf=1 [following]
--2024-10-19 16:56:06 -- http://psychz.dl.sourceforge.net/project/sonar-pkg/rpm/sonar.repo?viasf=1
Resolving psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)... 208.87.241.191
Connecting to psychz.dl.sourceforge.net (psychz.dl.sourceforge.net)|208.87.241.191|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 93 [application/octet-stream]
Saving to: '/etc/yum.repos.d/sonar.repo'

100%[=====] 93      --.-K/s   in 0s

2024-10-19 16:56:07 (16.7 MB/s) - '/etc/yum.repos.d/sonar.repo' saved [93/93]

[ec2-user@ip-172-31-92-157 ~]$ sudo yum install sonar -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
sonar
sonar/primary_db
Resolving Dependencies
>--> Running transaction check
-->> Package sonar.noarch 0:7.1-1 will be installed
-->> Finished Dependency Resolution
Dependencies Resolved

=====
Package           Arch       Version        Repository      Size
=====
Installing:
sonar            noarch    7.1-1          sonar          142 M
Transaction Summary
Install 1 Package

```

## Step 5:

Now, run the following commands to install the sonarqube

```

sudo su
cd /opt
||
wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-10.7.0.96327.zip
unzip sonarqube-10.7.0.96327.zip
||
cd sonarqube-10.7.0.96327
||
cd conf
||
cat sonar.properties
cd ..
cd bin
cd linux-x86-64
||
./sonar.sh start

sudo adduser sonar
sudo passwd sonar
sudo chown -R sonar:sonar /opt/sonarqube-10.7.0.96327
su - sonar
cd /opt/sonarqube-10.7.0.96327/bin/linux-x86-64/
./sonar.sh start
./sonar.sh status

```

```
MINGW64: C:/Users/User/Downloads -    
inflate: sonarqube-10.7.0.96327/web/WEB-INF/web.xml
creating: sonarqube-10.7.0.96327/lib/jdbc/mssql/
inflate: sonarqube-10.7.0.96327/lib/jdbc/mssql/mssql-jdbc-12.6.3.jre11.jar
creating: sonarqube-10.7.0.96327/lib/jdbc/postgresql/
inflate: sonarqube-10.7.0.96327/lib/jdbc/postgresql/postgresql-42.7.3.jar
creating: sonarqube-10.7.0.96327/lib/jdbc/h2/
inflate: sonarqube-10.7.0.96327/lib/jdbc/h2/h2-2.2.224.jar
inflate: sonarqube-10.7.0.96327/lib/sonar-shutdowner-10.7.0.96327.jar
creating: sonarqube-10.7.0.96327/elasticsearch/plugins/
[root@ip-172-31-82-31 opt]# 11
total 741384
drwxr-xr-x 4 root root 33 Oct 10 21:23 aws
drwxr-xr-x 11 sonar sonar 144 Oct 18 18:12 sonar
drwxr-xr-x 12 root root 384 Sep 27 2016 sonarqube-10.7.0.96327
drwxr-xr-x 1 root root 759175712 Sep 27 15:52 sonarqube-10.7.0.96327.zip
[root@ip-172-31-82-31 opt]# cd sonarqube-10.7.0.96327
[root@ip-172-31-82-31 sonarqube-10.7.0.96327]# 11
total 112
-rw-r--r-- 1 root root 7651 Sep 27 15:13 COPYING
drwxr-xr-x 6 root root 117 Sep 27 15:13 bin
drwxr-xr-x 2 root root 30 Sep 27 15:13 conf
drwxr-xr-x 2 root root 24 Sep 27 15:13 data
-rw-r--r-- 1 root root 73376 Sep 27 15:14 dependency-license.json
drwxr-xr-x 7 root root 132 Sep 27 15:16 elasticsearch
drwxr-xr-x 4 root root 40 Sep 27 15:13 extensions
drwxr-xr-x 2 root root 16384 Sep 27 15:16 jre
drwxr-xr-x 2 root root 134 Sep 27 15:13 logs
drwxr-xr-x 2 root root 24 Sep 27 15:13 temp
drwxr-xr-x 6 root root 16384 Sep 27 15:16 web
[root@ip-172-31-82-31 sonarqube-10.7.0.96327]# cd conf
[root@ip-172-31-82-31 conf]# 11
total 24
-rw-r--r-- 1 root root 21761 Sep 27 15:13 sonar.properties
[root@ip-172-31-82-31 conf]# cat sonar.properties
#-----
# IMPORTANT:
# This file will *not* be reloaded when using the api/system/restart endpoint.
# In order for any change made to this file to be taken into account, you must perform a full
# restart of the main SonarQube service.
#-----

# Property values can:
# - be overridden by environment variables. The name of the corresponding environment variable is the
# upper-cased name of the property where all the dot ('.') and dash ('-') characters are replaced by
# underscores ('_'). For example, to override 'sonar.web.systemPasscode' use 'SONAR_WEB_SYSTEMPASSCODE'.
# - be encrypted. See https://docs.sonarsource.com/sonarqube/latest/instance-administration/security/#settings-encryption
#-----

# DATABASE
#-----
# IMPORTANT:
# The embedded H2 database is used by default. It is recommended for tests but not for
# production use. Supported databases are Oracle, PostgreSQL and Microsoft SQLServer.
# - Changes to database connection URL (sonar.jdbc.url) can affect SonarSource licensed products.

# User credentials.
# Permissions to create tables, indices and triggers must be granted to JDBC user.
# The schema must be created first.
#sonar.jdbc.username=
#sonar.jdbc.password=

#----- Embedded Database (default)
# H2 embedded database server listening port, defaults to 9092
```

```

MINGW64:/c/Users/User/Downloads
#---- Oracle 19c/21c
# The Oracle JDBC driver must be copied into the directory extensions/jdbc-driver/oracle/.
# Only the thin client is supported, and we recommend using the latest Oracle JDBC driver. See
# https://jira.sonarsource.com/browse/SONAR-9758 for more details.
# If you need to set the schema, please refer to http://jira.sonarsource.com/browse/SONAR-5000
#sonar.jdbc.url=jdbc:oracle:thin:@localhost:1521/XE

#----- PostgreSQL 11 or greater
# By default the schema named "public" is used. It can be overridden with the parameter "currentSchema".
#sonar.jdbc.url=jdbc:postgresql://localhost/sonarqube?currentSchema=my_schema

#----- Microsoft SQL Server 2014/2016/2017/2019/2022 and SQL Azure
# A database named sonar must exist and its collation must be case-sensitive (CS) and accent-sensitive (AS)
# Use the following connection string if you want to use integrated security with Microsoft Sql Server
# Do not set sonar.jdbc.username or sonar.jdbc.password property if you are using Integrated Security
# For Integrated Security to work, you have to install the Microsoft SQL JDBC Auth package
# Please refer to the online documentation https://docs.sonarsource.com/sonarqube
# for the exact procedure for this version of SonarQube.
#sonar.jdbc.url=jdbc:sqlserver://localhost:databaseName=sonar;integratedSecurity=true

# Use the following connection string if you want to use SQL Auth while connecting to MS Sql Server.
# Set the sonar.jdbc.username and sonar.jdbc.password appropriately.
#sonar.jdbc.url=jdbc:sqlserver://localhost:databaseName=sonar

#----- Connection pool settings
# The maximum number of active connections that can be allocated
# at the same time, or negative for no limit.
# The recommended value is 1.2 * max sizes of HTTP pools. For example if HTTP ports are
# enabled with default sizes (50, see property sonar.web.http.maxThreads)
[root@ip-172-31-82-31 conf]# cd ..
[root@ip-172-31-82-31 sonarqube-10.7.0.96327]# ll
total 112
-rw-r--r--. 1 root root 7651 Sep 27 15:13 COPYING
drwxr-xr-x. 6 root root 117 Sep 27 15:13 bin
drwxr-xr-x. 2 root root 30 Sep 27 15:13 conf
drwxr-xr-x. 2 root root 24 Sep 27 15:13 data
-rw-r--r--. 1 root root 73376 Sep 27 15:14 dependency-license.json
drwxr-xr-x. 7 root root 132 Sep 27 15:16 elasticsearch
drwxr-xr-x. 4 root root 40 Sep 27 15:13 extensions
drwxr-xr-x. 2 root root 16384 Sep 27 15:16 jres
drwxr-xr-x. 5 root root 134 Sep 27 15:16 lib
drwxr-xr-x. 2 root root 24 Sep 27 15:13 logs
drwxr-xr-x. 2 root root 24 Sep 27 15:13 temp
drwxr-xr-x. 6 root root 16384 Sep 27 15:16 web
[root@ip-172-31-82-31 sonarqube-10.7.0.96327]# cd bin
[root@ip-172-31-82-31 bin]# ll
total 4
-rw-r--r--. 1 root root 101 Jun 10 23:34 elasticsearch
drwxr-xr-x. 2 root root 22 Sep 27 15:13 linux-x86-64
drwxr-xr-x. 2 root root 22 Sep 27 15:13 macosx-universal-64
drwxr-xr-x. 3 root root 63 Sep 27 15:13 windows-x86-64
drwxr-xr-x. 2 root root 25 Sep 27 15:13 winsw-license
[root@ip-172-31-82-31 bin]# cd Linux-x86-64
[root@ip-172-31-82-31 linux-x86-64]# ll
total 8
-rw-r--r--. 1 root root 7192 Sep 27 15:13 sonar.sh
[root@ip-172-31-82-31 linux-x86-64]# ./sonar.sh
/usr/bin/java
Usage: ./sonar.sh { console | start | stop | force-stop | restart | status | dump }
[root@ip-172-31-82-31 linux-x86-64]# ./sonar.sh start
/usr/bin/java
Starting SonarQube...

```

```

MINGW64:/c/Users/User/Downloads
[root@ip-172-31-82-31 bin]# cd linux-x86-64
[root@ip-172-31-82-31 linux-x86-64]# ll
total 8
-rw-r--r--. 1 root root 7192 Sep 27 15:13 sonar.sh
[root@ip-172-31-82-31 linux-x86-64]# ./sonar.sh
/usr/bin/java
Usage: ./sonar.sh { console | start | stop | force-stop | restart | status | dump }
[root@ip-172-31-82-31 linux-x86-64]# ./sonar.sh start
/usr/bin/java
Starting SonarQube...
Started SonarQube.
[root@ip-172-31-82-31 linux-x86-64]# ./sonar.sh status
/usr/bin/java
Removed stale pid file: ./SonarQube.pid
SonarQube is not running.
[root@ip-172-31-82-31 linux-x86-64]# cd /opt/sonarqube-10.7.0.96327/logs
[root@ip-172-31-82-31 logs]# cat sonar.log
2024.10.18 19:13:39 INFO app[] [o.s.a.AppFileSystem] Cleaning or creating temp directory /opt/sonarqube-10.7.0.96327/temp
2024.10.18 19:13:39 INFO app[] [o.s.a.EsSettings] Elasticsearch listening on [HTTP:127.0.0.1:9001, TCP:127.0.0.1:4529]
2024.10.18 19:13:39 INFO app[] [o.s.a.ProcessLauncherImpl] Launch process[Elasticsearch] from /opt/sonarqube-10.7.0.96327/elasticsearch: /usr/lib/jvm/java-17-amazon-corretto.x86_64/bin/java -Xms4m -Xmx64m -XX:Desdistribution-type=tar -cp /opt/sonarqube-10.7.0.96327/elasticsearch/lib/*;/opt/sonarqube-10.7.0.96327/elasticsearch-des.path.conf=/opt/sonarqube-10.7.0.96327/temp/conf/esDesdistribution-type=tar -cp /opt/sonarqube-10.7.0.96327/elasticsearch/lib/*;/opt/sonarqube-10.7.0.96327/elasticsearch-des.path.conf=/opt/sonarqube-10.7.0.96327/elasticsearch/lib/cli-launcher/* org.elasticsearch.cli.toolLauncher
2024.10.18 19:13:39 INFO app[] [o.s.a.SchedulerImpl] Waiting for Elasticsearch to be up and running
2024.10.18 19:13:43 WARN app[] [o.s.a.p.AbstractManagedProcess] Process exited with exit value [ElasticSearch]: 1
2024.10.18 19:13:43 INFO app[] [o.s.a.SchedulerImpl] Process[ElasticSearch] is stopped
2024.10.18 19:13:43 INFO app[] [o.s.a.SchedulerImpl] SonarQube is stopped
[root@ip-172-31-82-31 logs]# cat /opt/sonarqube-10.7.0.96327/logs/es.log
2024.10.18 19:13:43 INFO es[] [o.e.NativeAccess] Using [jna] native provider and native methods for [Linux]
2024.10.18 19:13:43 ERROR es[] [o.e.b.Elasticsearch] Fatal exception while booting Elasticsearch
java.lang.RuntimeException: cannot run elasticsearch as root
    at org.elasticsearch.bootstrap.Elasticsearch.initializeNatives(Elasticsearch.java:286) ~[elasticsearch-8.14.1.jar:?]
    at org.elasticsearch.bootstrap.Elasticsearch.initPhase2(Elasticsearch.java:169) ~[elasticsearch-8.14.1.jar:?]
    at org.elasticsearch.bootstrap.Elasticsearch.main(Elasticsearch.java:74) ~[elasticsearch-8.14.1.jar:?]
[root@ip-172-31-82-31 logs]# cd ..
[root@ip-172-31-82-31 opt]# cd ..
[root@ip-172-31-82-31 /]# sudo adduser sonar
adduser: user `sonar` already exists
[root@ip-172-31-82-31 /]# sudo passwd sonar
Changing password for user sonar.
New password:
New password:
BAD PASSWORD: The password contains the user name in some form
Retype new password:
Retype new password:
password: all authentication tokens updated successfully.
[root@ip-172-31-82-31 /]# sudo chown -R sonar:sonar /opt/sonarqube-10.7.0.96327
[root@ip-172-31-82-31 /]# su - sonar
last login: Fri Oct 18 18:26:31 UTC 2024 on pts/1
[sonar@ip-172-31-82-31 ~]$ cd /opt/sonarqube-10.7.0.96327/bin/linux-x86-64
[sonar@ip-172-31-82-31 linux-x86-64]$ ./sonar.sh start
/usr/bin/java
Starting SonarQube...
Started SonarQube.
[sonar@ip-172-31-82-31 linux-x86-64]$ ./sonar.sh status
/usr/bin/java
SonarQube is running (29499).
[sonar@ip-172-31-82-31 linux-x86-64]$ client_loop: send disconnect: Connection reset by peer

```

User@DESKTOP-QOK15A MINGW64 ~ /Downloads (master)

## Step 6:

Now, go to EC2 dashboard and select SonarQubeServer and copy its public address and visit <http://<public-address>:9000>

Screenshot of the AWS EC2 Instances page showing two running instances: JenkinsServer and SonarQubeServer.

**Instances (1/2) Info**

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
JenkinsServer	i-05f12961a9cf8cf3e	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-98-80
SonarQubeServer	i-061f29e11e3fa1a8b	Running	t2.medium	2/2 checks passed	View alarms	us-east-1c	ec2-54-21

**i-061f29e11e3fa1a8b (SonarQubeServer)**

**Details** | Status and alarms | Monitoring | Security | Networking | Storage | Tags

**Instance summary**

- Instance ID: i-061f29e11e3fa1a8b (SonarQubeServer)
- IPv6 address: -
- Hostname type: IP name: ip-172-31-92-157.ec2.internal
- Answer private resource DNS name
- Public IPv4 address copied: 54.210.13.192 | open address
- Instance state: Running
- Private IP DNS name (IPv4 only): ip-172-31-92-157.ec2.internal
- Instance type: t2.medium

Private IPv4 addresses: 172.31.92.157

Public IPv4 DNS: ec2-54-210-13-192.compute-1.amazonaws.com | open address

Elastic IP addresses:

## Step 7:

You will be redirected to this page on successful installation of SonarQube and visiting the public address url with port 9000. Login the username=admin and password=admin.

Not secure 54.210.13.192:9000/sessions/new?return\_to=%2F

**sonar**

**Log in to SonarQube**

Login \*

Password \*

Go back **Login**

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LGPL v3 Community Documentation Plugins

## Step 8:

Now, set up the initial configurations by setting up new password.  
password=Anuprita@4321

Not secure 54.210.13.192:9000/account/reset\_password

### Update your password

⚠️ This account should not use the default password.

**Enter a new password**

All fields marked with \* are required

**Old Password \***  
\*\*\*\*\*

**Password \***  
\*\*\*\*\*

**Confirm Password \***  
\*\*\*\*\*

**Update**

#### Step 9:

Now, click on the Create a local project link and name the project Hello-World and choose use the global setting

Not secure 54.210.13.192:9000/projects/create

**sonarqube** Projects Issues Rules Quality Profiles Quality Gates Administration More ? A

#### How do you want to create your project?

Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)?  
Create your project from your favorite DevOps platform.

First, you need to set up a DevOps platform configuration.

Import from Azure DevOps
Setup

Import from Bitbucket Cloud
Setup

Import from Bitbucket Server
Setup

Import from GitHub
Setup

Import from GitLab
Setup

Are you just testing or have an advanced use-case? Create a local project.

[Create a local project](#)

⚠️ **Embedded database should be used for evaluation purposes only**  
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.

Not secure 54.210.13.192:9000/projects/create?mode=manual

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More

1 of 2

## Create a local project

Project display name \*

Project key \*

Main branch name \*

The name of your project's default branch [Learn More](#)

[Cancel](#) [Next](#)

**⚠️ Embedded database should be used for evaluation purposes only**  
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.

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Not secure 54.210.13.192:9000/projects/create?mode=manual&ssetncd=true

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More

2 of 2

## Set up project for Clean as You Code

The new code definition sets which part of your code will be considered new code. This helps you focus attention on the most recent changes to your project, enabling you to follow the Clean as You Code methodology. Learn more: [Defining New Code](#)

Choose the baseline for new code for this project

Use the global setting

**Previous version**  
Any code that has changed since the previous version is considered new code.  
Recommended for projects following regular versions or releases.

Define a specific setting for this project

Previous version  
Any code that has changed since the previous version is considered new code.  
Recommended for projects following regular versions or releases.

Number of days  
Any code that has changed in the last x days is considered new code. If no action is taken on a new issue after x days, this issue will become part of the overall code.  
Recommended for projects following continuous delivery.

Reference branch  
Choose a branch as the baseline for the new code.

Not secure 54.210.13.192:9000/tutorials?id=Hello-World

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More ? A

Hello World / main

Overview Issues Security Hotspots Measures Code Activity Project Settings Project Information

## Analysis Method

Use this page to manage and set-up the way your analyses are performed.

### How do you want to analyze your repository?

With Jenkins  With GitHub Actions  With Bitbucket Pipelines

With GitLab CI  With Azure Pipelines  Other CI  
SonarQube integrates with your workflow no matter which CI tool you're using.

Locally  
Use this for testing or advanced use-case. Other modes are recommended to help you set up your CI environment.

**⚠️ Embedded database should be used for evaluation purposes only**  
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.

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## Step 10:

Click on Administration > Security > Users. And then give a token name and click on the generate token button and copy the token number and save it somewhere. For now, I have saved it in notepad.

Not secure | 54.210.13.192:9000/admin/settings

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More ? A

### Administration

Configuration Security Projects System Marketplace

**General** Users Groups Edit global se Global Permissions Find in Permission Templates

Analysis Scope Authentication DevOps Platform Integrations Email Notification External Analyzers General Housekeeping JaCoCo Languages

**Duplications**

Cross project duplication detection   
DEPRECATED - By default, SonarQube detects duplications at project level. This means that a block duplicated on two different projects won't be reported. Setting this parameter to "true" allows to detect duplicates across projects. Note that activating this property will significantly increase each SonarQube analysis time, and therefore badly impact the performances of report processing as more and more projects are getting involved in this cross project duplication mechanism.  
Key: sonar.cpd.cross\_project

The screenshot shows the SonarQube Administration interface. A modal window titled "Tokens of Administrator" is open, showing the "Generate Tokens" section. It has fields for "Name" (with placeholder "Enter Token Name") and "Expires in" (set to "30 days"). A "Generate" button is present. Below the form, a message says "New token "admin-token" has been created. Make sure you copy it now, you won't be able to see it again!" followed by the token value "squ\_c395eea8275923706da6ddb29f77d673a9a51668" and a copy icon. A table lists tokens: "admin-token" (User type, Never last used, October 19, 2024 created, November 18, 2024 expiration). A "Revoke" button is next to the token row. A "Close" button is at the bottom right of the modal. At the bottom of the page, there is a warning about the embedded database and information about SonarQube's power source.

Not secure | 54.210.13.192:9000/admin/users

sonarqube

Administration

Configuration Security

Users

Create and administer individual users

Search by login or name

Name

A Administrator admin

Tokens of Administrator

Generate Tokens

Name Expires in

Enter Token Name 30 days Generate

New token "admin-token" has been created. Make sure you copy it now, you won't be able to see it again!

squ\_c395eea8275923706da6ddb29f77d673a9a51668

Name Type Project Last use Created Expiration

admin-token User Never October 19, 2024 November 18, 2024 Revoke

Close

⚠️ Embedded database should be used for evaluation purposes only  
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.

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## GitHub

### Step 1:

Make a repository and upload you files in the repository.

The screenshot shows the Visual Studio Code (VS Code) interface. The Explorer sidebar shows a project folder named "ADVDEVOPS\_PRACTICAL" containing ".terraform", ".terraform.lock.hcl", "hello.py", "main.tf", and "terraform.tfstate". The "hello.py" file is open in the editor, displaying the following Python code:

```
print("Hello, World!")
```

The status bar at the bottom shows "Launchpad" and other system details like "Ln 1, Col 23" and "Python 3.12.0 64-bit".

**About**  
No description, website, or topics provided.

**Activity**  
0 stars  
1 watching  
0 forks

**Releases**  
No releases published  
[Create a new release](#)

**Packages**  
No packages published  
[Publish your first package](#)

**Languages**  
Python 100.0%

**Suggested workflows**

## Pipeline

### Step 1:

Open the git bash for Jenkins and run the following commands in the terminal to install git.

```
sudo yum install git
git --version
```

```
user@DESKTOP-0OK15A: MINGW64 ~/Downloads (master)
$ ssh -i "jenkins.pem" ec2-user@ec2-18-223-40.compute-1.amazonaws.com
Last login: Sat Oct 19 17:56:46 2024 from 49.36.105.96
#
# Amazon Linux 2
# AL2 End of Life is 2025-06-30.
#
# A newer version of Amazon Linux is available!
# Amazon Linux 2023, GA and supported until 2028-03-15.
# https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-42-86 ~]$ sudo yum install git
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
Resolving Dependencies
--> Running transaction check
--> Package git.x86_64 0:2.40.1-1.amzn2.0.3 will be installed
--> Processing Dependency: git-core = 2.40.1-1.amzn2.0.3 for package: git-2.40.1-1.amzn2.0.3.x86_64
--> Processing Dependency: git-core-doc.noarch 0:2.40.1-1.amzn2.0.3 will be installed
--> Processing Dependency: perl-Git.noarch 0:2.40.1-1.amzn2.0.3 will be installed
--> Processing Dependency: perl(Error) for package: perl-Git-2.40.1-1.amzn2.0.3.noarch
--> Processing Dependency: perl-TermReadkey.x86_64 0:2.30-20.amzn2.0.2 will be installed
--> Running transaction check
-->> Package perl-Error.noarch 1:0.17020-2.amzn2 will be installed
-->> Finished Dependency Resolution

Dependencies Resolved

=====
Package           Arch      Version          Repository        Size
=====
Installing:
git              x86_64   2.40.1-1.amzn2.0.3    amzn2-core       54 k
Installing for dependencies:
git-core          x86_64   2.40.1-1.amzn2.0.3    amzn2-core       10 M
git-core-doc     noarch   2.40.1-1.amzn2.0.3    amzn2-core      3.0 M
perl-Error       noarch   1:0.17020-2.amzn2      amzn2-core      32 k
perl-Git         noarch   2.40.1-1.amzn2.0.3    amzn2-core      42 k
perl-TermReadkey x86_64   2.30-20.amzn2.0.2    amzn2-core      31 k

Transaction Summary
Install 1 Package (+5 Dependent packages)

Total download size: 13 M
Installed size: 44 M
Is this ok [y/d/N]: y
Downloading packages:
(1/6): git-2.40.1-1.amzn2.0.3.x86_64.rpm | 54 kB 00:00:00
(2/6): git-core-doc-2.40.1-1.amzn2.0.3.noarch.rpm | 3.0 MB 00:00:00
(3/6): perl-Error-0.17020-2.amzn2.noarch.rpm | 32 kB 00:00:00
(4/6): git-core-2.40.1-1.amzn2.0.3.x86_64.rpm | 10 MB 00:00:00
(5/6): perl-Git-2.40.1-1.amzn2.0.3.noarch.rpm | 42 kB 00:00:00
(6/6): perl-TermReadkey-2.30-20.amzn2.0.2.x86_64.rpm | 31 kB 00:00:00
```

### Step 2:

Go to Manage Jenkins > System. Scroll down to SonarQube Servers section and name it as SonarQube Server and copy the <http://<public-address-of-sonarqube>:9000>

Also, copy the token as secret here in secret text.

The screenshot shows the Jenkins Manage Jenkins > System configuration page. In the SonarQube servers section, there is a form for adding a new SonarQube installation. The 'Name' field contains 'SonarQube Server'. The 'Server URL' field contains 'http://54.210.13.192:9000'. The 'Server authentication token' dropdown is set to '- none -'. At the bottom of the form are 'Save' and 'Apply' buttons.

The screenshot shows the Jenkins Manage Jenkins > System configuration page with a modal dialog titled 'Jenkins Credentials Provider: Jenkins'. The dialog is titled 'Add Credentials' and contains fields for 'Domain' (set to 'Global credentials (unrestricted)'), 'Kind' (set to 'Secret text'), 'Scope' (set to 'Global (Jenkins, nodes, items, all child items, etc)'), 'Secret' (containing a redacted value), 'ID' (empty), and 'Description' (empty). At the bottom of the dialog are 'Save' and 'Apply' buttons.

Not secure 98.80.223.40:8080/manage/configure

Dashboard > Manage Jenkins > System >

If checked, job administrators will be able to inject a SonarQube server configuration as environment variables in the build.

Environment variables

**SonarQube installations**

List of SonarQube installations

Name	<input type="text" value="SonarQube"/>	
Server URL	Default is http://localhost:9000 <input type="text" value="http://54.210.13.192:9000"/>	
Server authentication token	SonarQube authentication token. Mandatory when anonymous access is disabled. <input type="password" value="Secret text"/> <a href="#">+ Add</a>	
<a href="#">Advanced</a>		

[Add SonarQube](#)

[Save](#) [Apply](#)

### Step 3:

Go to Manage Jenkins > Credentials. Copy this id and you will need to paste in the Pipeline Script later.

Not secure | 98.80.223.40:8080/manage/credentials/

**Jenkins**

Dashboard > Manage Jenkins > Credentials

### Credentials

T	P	Store ↓	Domain	ID	Name
		System	(global)	<a href="#">6e0ad648-6931-48d0-a2eb-938a55db6234</a>	<a href="#">Secret text</a>

### Stores scoped to Jenkins

P	Store ↓	Domains
	System	(global)

Icon:  S  M  L

REST API Jenkins 2.462.3

### Step 4:

## Create a new pipeline and name it pipeline1.

Enter an item name  
pipeline1

Select an item type

- Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.
- 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.
- Folder**  
Creates a container 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.
- Multibranch Pipeline**  
Creates a set of Pipeline projects according to detected branches in one SCM repository.
- Organization Folder**  
Creates a set of multibranch project subfolders by scanning for repositories.

OK

## Step 5:

Now select on the Git project and paste your GitHub url.

Dashboard > pipeline1 > Configuration

Configure General Enabled

General

Description

Plain text: [Preview](#)

Discard old builds ?

Do not allow concurrent builds

Do not allow the pipeline to resume if the controller restarts

GitHub project

Project url ?  
https://github.com/Anuprita2022-26/helloworld\_python/

Advanced ▾

Pipeline speed/durability override ?

Save Apply

## Step 6:

Now, write the following Pipeline Script.

pipeline {

```
agent any
stages {
```

```
stage('Clone Repository') {
    steps {
        git branch: 'main', url: 'https://github.com/Anuprita2022-26/helloworld_python.git'
    }
}
stage('SonarQube Analysis') {
    environment {
        scannerHome = tool 'SonarQubeScanner' // Ensure SonarQube Scanner is installed
    }
    steps {
        withSonarQubeEnv('SonarQube') { // Name of SonarQube server configured in Jenkins
            withCredentials([string(credentialsId: '6e0ad648-6931-48d0-a2eb-938a55db6234', variable: 'SONAR_TOKEN')]) {
                sh "${scannerHome}/bin/sonar-scanner -Dsonar.projectKey=Hello-World -Dsonar.sources=. -Dsonar.login=$SONAR_TOKEN"
            }
        }
    }
}
post {
    always {
        echo 'Pipeline completed'
    }
}
```

Not secure | 98.80.223.40:8080/job/pipeline1/configure

Dashboard > pipeline1 > Configuration

## Configure

### Advanced Project Options

General

**Advanced Project Options**

Pipeline

#### Pipeline

##### Definition

Pipeline script

```

1 pipeline {
2   agent any
3   stages {
4     stage('Clone Repository') {
5       steps {
6         git branch: 'main', url: 'https://github.com/Anuprita2022-26/helloworld_python.git'
7       }
8     }
9     stage('SonarQube Analysis') {
10    environment {
11      scannerHome = tool 'SonarQubeScanner' // Ensure SonarQube Scanner is installed
12    }
13    steps {
14      withSonarQubeEnv('SonarQube') { // Name of SonarQube server configured in Jenkins
15        withCredentials([string(credentialsId: '6e0ad648-6931-48d0-a2eb-938a55db6234', variable: 'SONAR_TOKEN')]) {
16          sh "${scannerHome}/bin/sonar-scanner -Dsonar.projectKey=Hello-World -Dsonar.sources=. -Dsonar.login=$SONAR_TOKEN"
17        }
18      }
19    }
20  }
21}

```

Use Groovy Sandbox ?

**Pipeline Syntax**

Save Apply

## Step 7:

Build run the pipeline. It gives success. Also, check the console.

Jenkins

Search (CTRL+K) Anuprita log out

Dashboard > pipeline1 >

## Status

### pipeline1

Add description

Changes Build Now Configure Delete Pipeline Full Stage View GitHub Stages Rename Pipeline Syntax

#### Stage View

Average stage times: (Average full run time: ~28s)

	Clone Repository	SonarQube Analysis	Declarative: Post Actions
#5 Oct 20 00:28 No Changes	344ms	26s	58ms Success
#4 Oct 20 00:15 No Changes	340ms	2s failed	
#3 Oct 20 00:08 No Changes	3s	4s failed	75ms
#2 Oct 19 23:59 No Changes	1s failed	204ms failed	110ms
#1 Oct 19 23:51 No Changes	458ms failed	179ms failed	108ms

Build History trend Filter... #5 Oct 19, 2024, 6:58 PM #4 Oct 19, 2024, 6:45 PM #3 Oct 19, 2024, 6:38 PM

Not secure | 98.80.223.40:8080/job/pipeline1/5/console

# Jenkins

Dashboard > pipeline1 > #5

## Console Output

Started by user Anuprita  
 [Pipeline] Start of Pipeline  
 [Pipeline] node  
 Running on Jenkins in /var/lib/jenkins/workspace/pipeline1  
 [Pipeline] {  
 [Pipeline] stage  
 [Pipeline] { (Clone Repository)  
 [Pipeline] git  
 The recommended git tool is: NONE  
 No credentials specified  
 > git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/pipeline1/.git # timeout=10  
 Fetching changes from the remote Git repository  
 > git config remote.origin.url https://github.com/Anuprita2022-26/helloworld\_python.git # timeout=10  
 Fetching upstream changes from https://github.com/Anuprita2022-26/helloworld\_python.git  
 > git --version # timeout=10  
 > git --version # 'git version 2.40.1'  
 > git fetch --tags --force --progress -- https://github.com/Anuprita2022-26/helloworld\_python.git +refs/heads/\*:refs/remotes/origin/\* # timeout=10  
 > git rev-parse refs/remotes/origin/main^{commit} # timeout=10  
 Checking out Revision 28b08a8b749d48fe74988ca608ac5cde40bd23bd (refs/remotes/origin/main)  
 > git config core.sparsecheckout # timeout=10  
 > git checkout -f 28b08a8b749d48fe74988ca608ac5cde40bd23bd # timeout=10  
 > git branch -a -v --no-abbrev # timeout=10  
 > git branch -D main # timeout=10  
 > git checkout -b main 28b08a8b749d48fe74988ca608ac5cde40bd23bd # timeout=10  
 Commit message: "Add files via upload"  
 > git rev-list --no-walk 28b08a8b749d48fe74988ca608ac5cde40bd23bd # timeout=10  
 [Pipeline] }  
 [Pipeline] // stage

Not secure | 98.80.223.40:8080/job/pipeline1/5/console

Dashboard > pipeline1 > #5

```
18:59:20.467 INFO CPU Executor CPU calculation finished (done) | time=0ms
18:59:20.483 INFO SCM revision ID '28b08a8b749d48fe74988ca608ac5cde40bd23bd'
18:59:20.715 INFO Analysis report generated in 223ms, dir size=221.6 kB
18:59:20.760 INFO Analysis report compressed in 47ms, zip size=22.5 kB
18:59:20.823 INFO Analysis report uploaded in 53ms
18:59:20.825 INFO ANALYSIS SUCCESSFUL, you can find the results at: http://54.210.13.192:9000/dashboard?id=Hello-World
18:59:20.826 INFO Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
18:59:20.826 INFO More about the report processing at http://54.210.13.192:9000/api/ce/task?id=d88de4d6-21ba-4b74-922f-410cda6d30e8
18:59:20.852 INFO Analysis total time: 13.793 s
18:59:20.855 INFO SonarScanner Engine completed successfully
18:59:20.925 INFO EXECUTION SUCCESS
18:59:20.939 INFO Total time: 24.932s
[Pipeline] }
[Pipeline] // withCredentials
[Pipeline] }
[Pipeline] // withSonarQubeEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Pipeline completed
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

REST API Jenkins 2.462.3

## SonarQube Analysis and Results

### Step 1:

Visit back to the <http://<public-address-of-sonarqube>:9000>

Now, go to projects section and you can see the analysis of the python project.

Not secure | 54.210.13.192:9000/projects

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More Search Create Project

My Favorites All

Filters

Quality Gate

	Passed	Failed
Passed	1	0
Failed	0	1

Security

	≥ 0 info issues	≥ 1 minor issue	≥ 1 major issue	≥ 1 critical issue	≥ 1 blocker issue
A	1	0	0	0	0
B	0	1	0	0	0
C	0	0	1	0	0
D	0	0	0	1	0
E	0	0	0	0	1

Reliability

	≥ 0 info issues	≥ 1 minor issue	≥ 1 major issue	≥ 1 critical issue
A	1	0	0	0
B	0	1	0	0
C	0	0	1	0
D	0	0	0	1

Search for projects... Perspective Overall Status Sort by Name ↴ 1 project(s) Home

☆ Hello World PUBLIC Passed

Last analysis: 4 minutes ago - 1 Lines of Code - Python

Security Reliability Maintainability Hotspots Reviewed Coverage Duplications

1 of 1 shown

**⚠ Embedded database should be used for evaluation purposes only**  
The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.