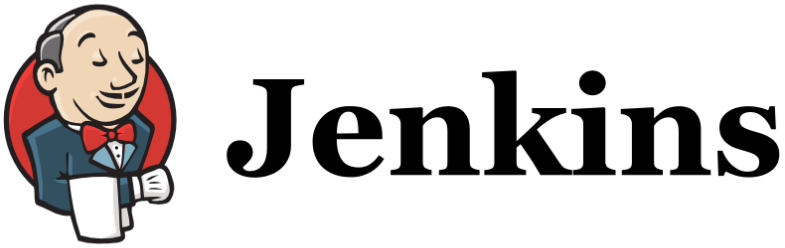
Day-22 : Getting Started with Jenkins



What is Jenkins?

- Jenkins is a popular open-source automation server that helps to automate various stages of the software development process. It provides a platform for building, testing, and deploying software projects, and it supports a wide range of tools and technologies.

- With Jenkins, you can automate tasks such as building and testing code, creating and deploying artifacts, and monitoring the status of your builds. Jenkins has a web-based interface that provides access to various features, such as build history, logs, and artifacts, as well as a plug-in architecture that allows you to extend the capabilities of the system. It also integrates with a variety of version control systems, including Git, and it supports multiple build systems, such as Apache Ant and Maven. The versatility and ease-of-use of Jenkins makes it a popular choice for organizations of all sizes, helping to streamline the software development process and improve the efficiency and reliability of their delivery pipeline.

- Jenkins achieves Continuous Integration with the help of plugins. Plugins allow the integration of Various DevOps stages. If you want to integrate a particular tool, you need to install the plugins for that tool. For example Git, Maven 2 project, Amazon EC2, HTML publisher etc.

Let us do discuss the necessity of this tool before going ahead to the procedural part for installation:

- Nowadays, humans are becoming lazy 😴 day by day so even having digital screens and just one click button in front of us then also need some automation.

- Here, I'm referring to that part of automation where we need not have to look upon a process(here called a job) for completion and after it doing another job. For that, we have Jenkins with us.

Tasks:

1. **What you understood in Jenkin, write a small article in your own words.**

   Jenkins is an open-source tool for automating the software development process, specifically focusing on continuous integration, continuous delivery, and deployment (CI/CD). It is written in Java and provides a platform for automating tasks such as

building, testing, and deploying code. With its web-based interface and plugin architecture, Jenkins offers a flexible and highly customizable solution for software development teams, helping to improve the efficiency and reliability of their delivery pipeline.

Jenkins is written in Java and is designed to be highly extensible, making it possible to add additional functionality through the use of plugins. This gives it the flexibility to integrate with a variety of tools and systems, such as version control systems like Git, and it supports multiple build systems, including Apache Ant and Maven.

One of the key benefits of Jenkins is its web-based interface, which provides a comprehensive view of the software development process. This interface makes it possible to view build history, manage build artifacts, and configure the system. Additionally, Jenkins provides notifications in the event of build failures, making it easy to identify and address issues in a timely manner.

Overall, Jenkins is a powerful tool that helps software development teams to streamline their processes and improve the efficiency and reliability of their delivery pipeline. Its ease-of-use, flexibility, and extensibility make it an ideal choice for organizations of all sizes, and it has become a popular choice for many software development teams around the world.

2. **Create a freestyle pipeline to print "Hello World!!**

First do setting up Jenkins on your EC2 Instance.

Step 1 : Update your system using command **sudo apt-get update**

Step 2 : Install java using command **sudo apt install openjdk-11-jre**

Step 3 : To check Installation is done use command **java -version**

Step 4 : Install Jenkins using following commands

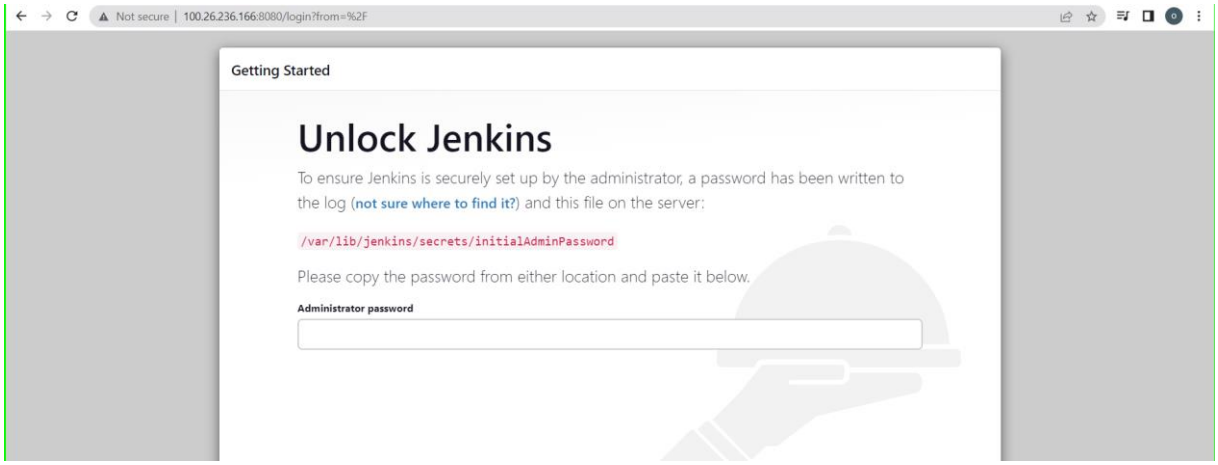
- **curl -fsSL https://pkg.jenkins.io/debian/jenkins.io.key | sudo tee \ /usr/share/keyrings/jenkins-keyring.asc > /dev/null**
- **echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \ https://pkg.jenkins.io/debian binary/ | sudo tee \ /etc/apt/sources.list.d/jenkins.list > /dev/null**
- **sudo apt-get update**
- **sudo apt-get install jenkins**

Step 5 : Start Jenkins using following commands

- **sudo systemctl enable jenkins**
- **sudo systemctl start jenkins**
- **sudo systemctl status Jenkins**

Step 6 : Add port number 8080 in inbound rule of security group of your Ec2 instance.

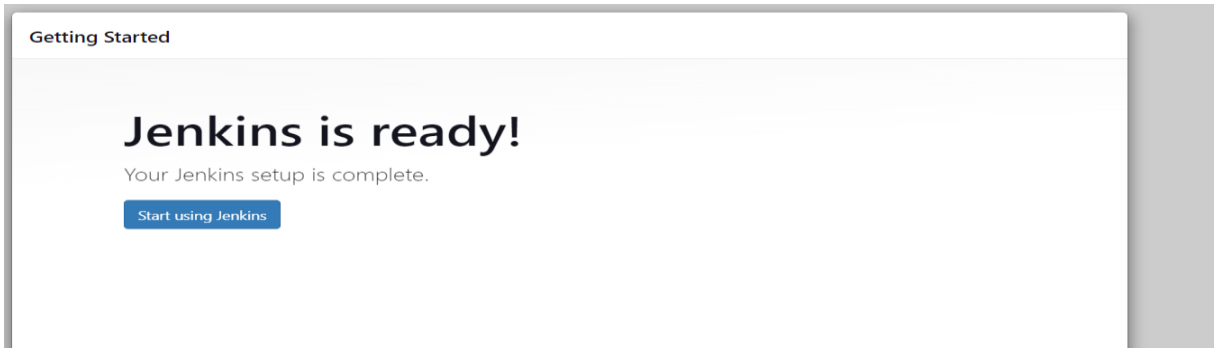
Step 7 : Copy IP address of ec2 instance and search in browse



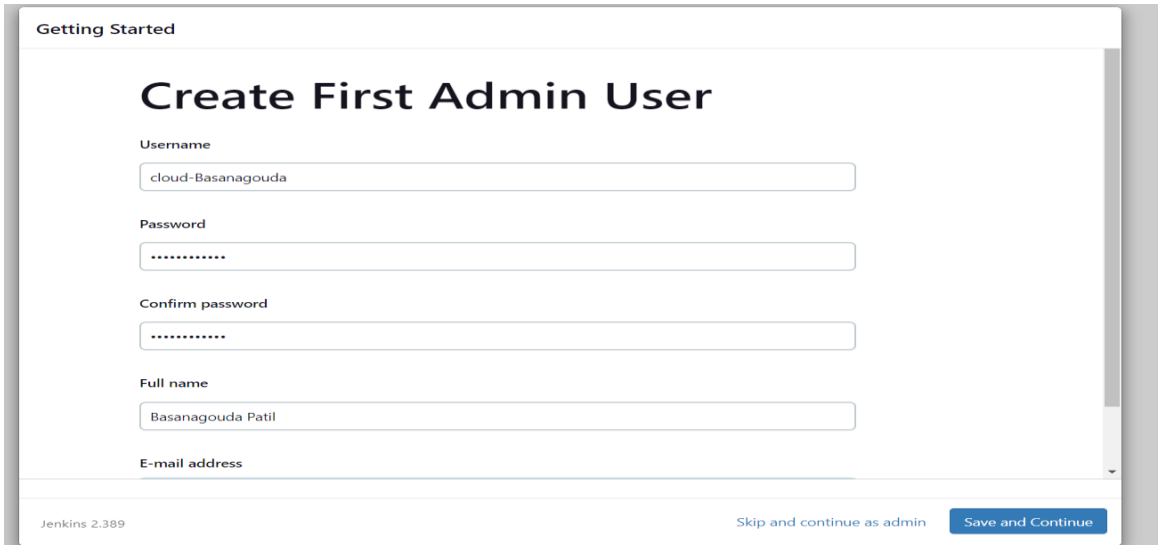
Step 8 : Copy the password path and go to your terminal and run it using cat command

```
ubuntu@ip-172-31-52-167:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
70bb240d090a496abd9eba6d96e1ea80
```

Step 9 : Copy the password and run it in browse



Step 10 : Create a First Admin User and save it.



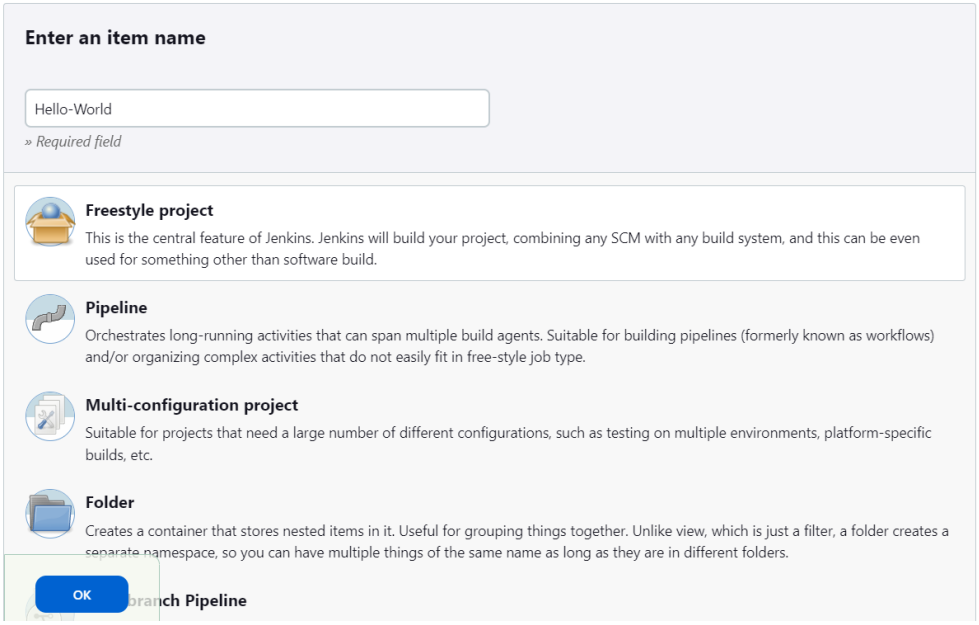
Step 11 : Copy this url and past it in new tab and save it.

Jenkins Successfully setting up is done.

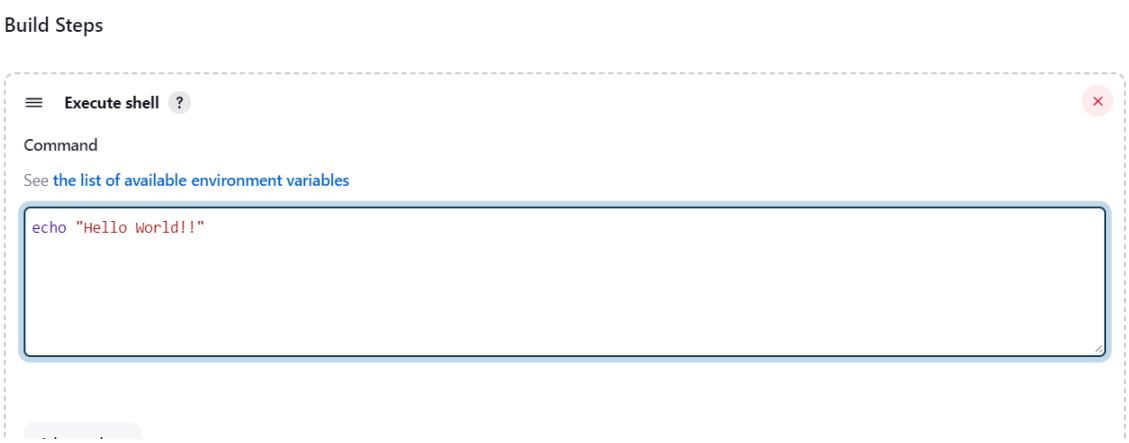
Now, To create Create a freestyle pipeline to print "Hello World!! , follow these steps:

Step 1 : Log in to your Jenkins instance and click on the “New Item” button.

Step 2 : Give your pipeline a name “Hello-World” and select “Freestyle project” as the type, then click on the “OK” button.

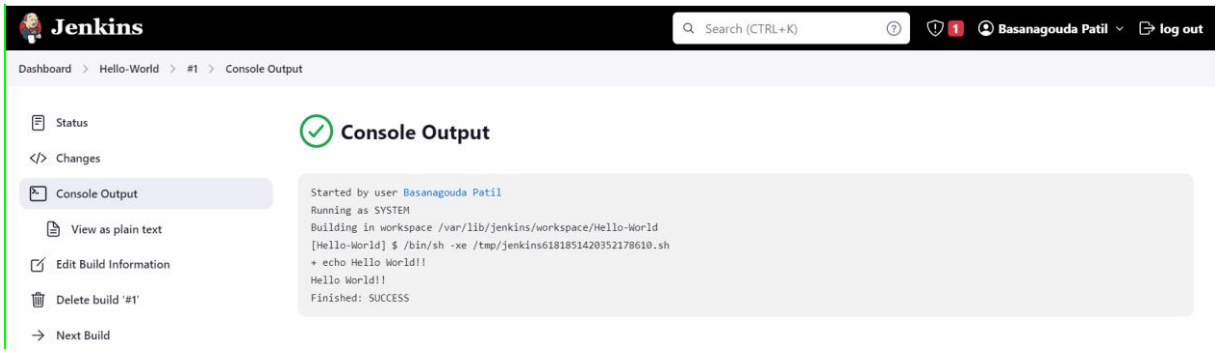


Step 3 : In the “Build” section, click on the “Add build step” button and select “Execute shell” option. In the “Command” field, enter the following command:



Step 4 : Click on the “Save” button to create the pipeline.

Step 5 : Click on the “Build Now” button to run the pipeline and see the output.



This pipeline will execute a single build step which will print the message “Hello World!!” when pipeline is built.