Jenkins Installation

Introduction

Jenkins is an open-source automation server primarily used for continuous integration and continuous delivery (CI/CD) in software development. It plays a crucial role in automating various stages of the software delivery process, including building, testing, and deploying applications.

Why Jenkins is Widely Used

1. Open Source: Jenkins is free to use and has a large community that contributes to its development, ensuring continuous improvement and support.
2. Extensibility: With hundreds of plugins available, Jenkins can integrate with virtually any tool in the CI/CD toolchain, allowing teams to customize their workflows according to specific needs.
3. Cross-Platform Support: Jenkins can run on various operating systems, including Windows, macOS, and Linux, making it versatile for different environments.
4. Pipeline as Code: Jenkins supports defining build processes as code through Jenkinsfiles, which allows for version control of the CI/CD process itself. This approach enhances collaboration among team members.
5. Scalability: Jenkins can distribute workloads across multiple machines, improving performance and enabling parallel execution of jobs.
6. Real-Time Feedback: By automating the build and test processes, Jenkins provides immediate feedback on code changes, helping developers identify issues early in the development cycle.

These features make Jenkins a popular choice among development teams looking to implement efficient CI/CD practices and streamline their software delivery processes.

Steps to Install

Create a VM machine

Refer this [doc](#) to create an VM maxhine and ssh into it.

Note: Configure security group settings to allow traffic on port 8080 (for Jenkins) and 22 (for SSH).

Start VM machine on cmd

ssh samthube@52.187.178.113

Update Package Index

sudo apt update

Install Java

sudo apt-get install openjdk-17-jdk

```
samthube@Jenkins-Vm:~$ sudo apt-get install openjdk-17-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  openjdk-11-jdk-headless openjdk-11-jre openjdk-11-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  adwaita-icon-theme fontconfig gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme libcairo-gobject2 libcairo2 libdatrie1 libdeflate0 libgail-common
  libgail18t64 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libjbig0 liblerc4 libpango-1.0-0
  libpangocairo-1.0-0 libpangoft2-1.0-0 libpixman-1-0 librsvg2-2 librsvg2-common libsharpyuv0 libthai-data libthai0 libtiff6 libwebp7 libxcb-render0 libxcursor1
  libxdamage1 openjdk-17-jdk-headless openjdk-17-jre openjdk-17-jre-headless ubuntu-mono
Suggested packages:
  gvfs librsvg2-bin openjdk-17-demo openjdk-17-source visualvm libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  adwaita-icon-theme fontconfig gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme libcairo-gobject2 libcairo2 libdatrie1 libdeflate0 libgail-common
  libgail18t64 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libjbig0 liblerc4 libpango-1.0-0
  libpangocairo-1.0-0 libpangoft2-1.0-0 libpixman-1-0 librsvg2-2 librsvg2-common libsharpyuv0 libthai-data libthai0 libtiff6 libwebp7 libxcb-render0 libxcursor1
  libxdamage1 openjdk-17-jdk openjdk-17-jdk-headless openjdk-17-jre openjdk-17-jre-headless ubuntu-mono
0 upgraded, 38 newly installed, 0 to remove and 42 not upgraded.
Need to get 131 MB of archives.
After this operation, 335 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

Verify the installation

java -version

```
samthube@Jenkins-Vm:~$ java -version
openjdk version "17.0.13" 2024-10-15
OpenJDK Runtime Environment (build 17.0.13+11-Ubuntu-2ubuntu124.04)
OpenJDK 64-Bit Server VM (build 17.0.13+11-Ubuntu-2ubuntu124.04, mixed mode, sharing)
```

Add the GPG Key

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian/jenkins.io-2023.key

Add Jenkins Repository

```
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
```

Update Package Index Again

```
sudo apt-get update
```

Install Jenkins

```
sudo apt-get install jenkins
```

Start, Enable and Check Jenkins Service
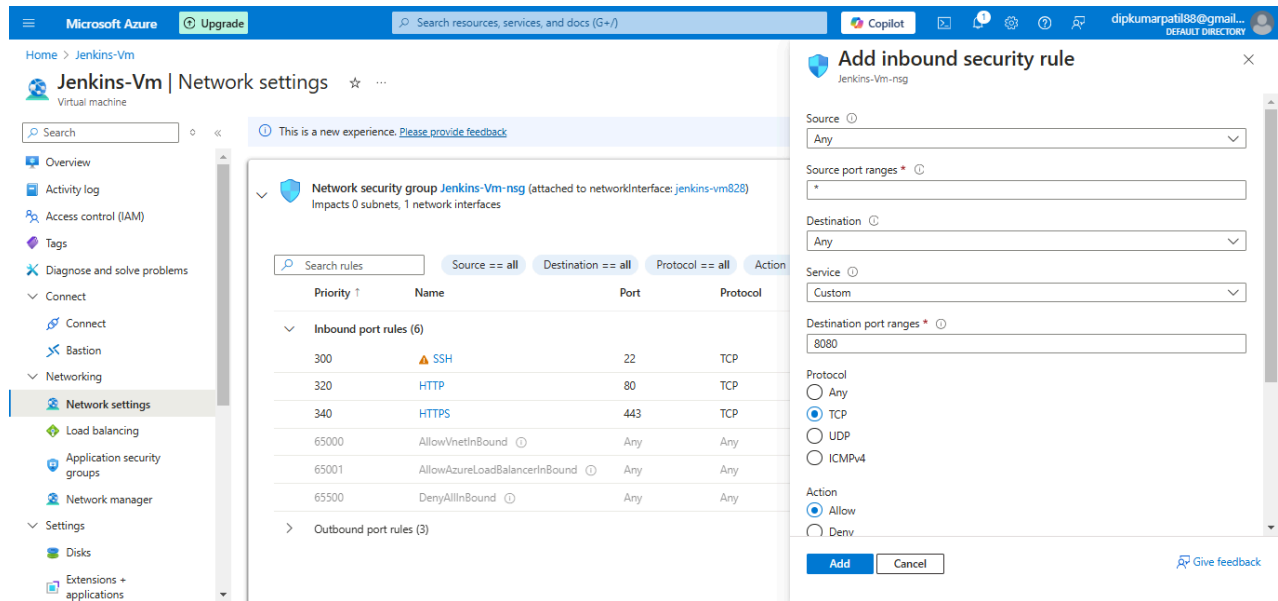
```
sudo systemctl enable jenkins
```

```
sudo systemctl start jenkins
```

```
sudo systemctl status jenkins
```


Configure Azure Network Security Group

Access Jenkins Web Interface

http://<your_vm_public_ip>:8080
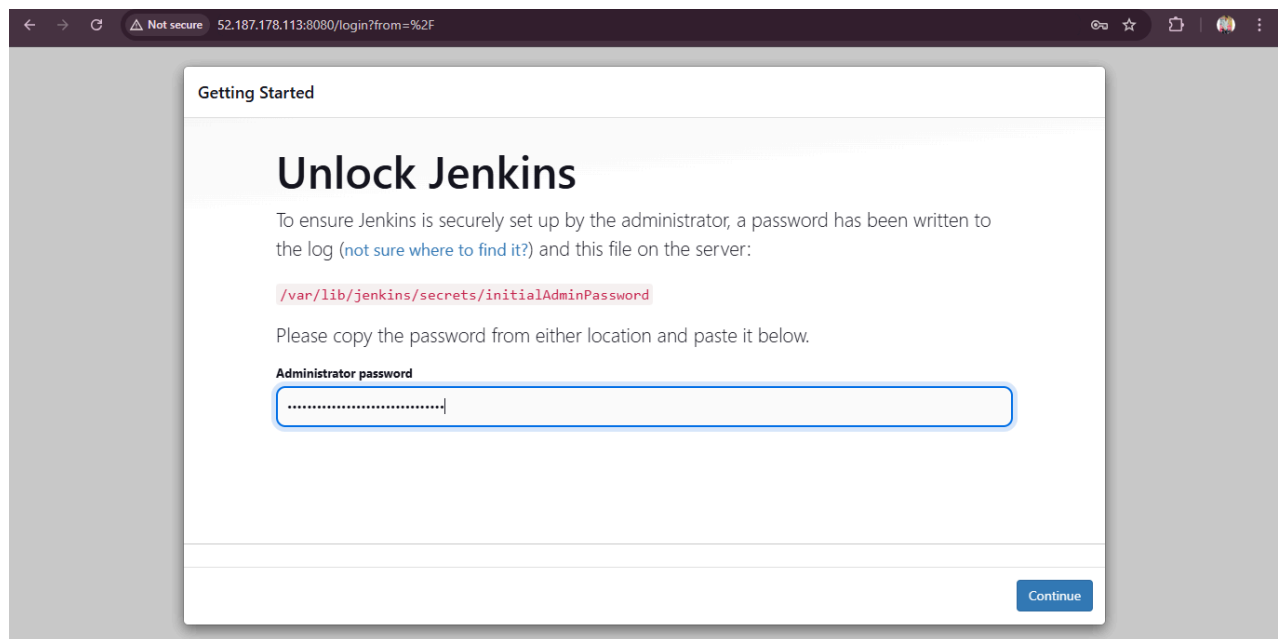
Navigate to specified directory

Copy the password from the file and paste it

sudo cat /var/lib/jenkins/secrets/initialAdminPassword

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

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

Administrator password

```
••••••••••••••••••••••••••
```

Continue

Follow The Prompt To Install Suggested Plugins

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.

Getting Started

Getting Started

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

```
** Structs
** Pipeline: Step API
** Token Macro
Build Timeout
** bouncycastle API
** Credentials
** Plain Credentials
** Variant
** SSH Credentials
Credentials Binding
** SCM API
** Pipeline: API
** commons-lang3 v3.x Jenkins
API
Timestamper
** Caffeine API
** Script Security
** JavaBeans Activation
Framework (JAF) API

** - required dependency
```

Jenkins 2.462.3

Create Admin User
Create your first admin user by adding necessary details

Getting Started

Create First Admin User

Username

samthube

Password

••••••••••

Confirm password

••••••••••

Full name

Samadhan Shrawan Thube

Jenkins 2.487   Skip and continue as admin   **Save and Continue**

Set Up URL For Jenkins

Getting Started

Instance Configuration

Jenkins URL: http://52.187.178.113:8080/

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.487   Not now   **Save and Finish**

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins

Jenkins 2.487

Jenkins Dashboard

Jenkins

Search (CTRL+K)

Samadhan Shrawan Thube

log out

Dashboard

+ New Item

Build History

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status   0/2

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Add description

Start building your software project

Create a job   +

Set up a distributed build

Set up an agent

Configure a cloud

Learn more about distributed builds   ?