

# Jenkins Installation

## Launch an EC2 Instance

The screenshot shows the AWS Management Console interface for launching an EC2 instance. The top navigation bar includes the AWS logo, a services menu, a search bar, and account information for 'Aakansha\_1 @ 6546-5448-3427'. Below the navigation is a secondary header with links for EC2, AWS Marketplace, IAM, CloudWatch, EFS, and RDS.

The main content area is titled 'Launch an instance' with an 'Info' link. A sub-section titled 'Name and tags' also has an 'Info' link. The 'Name' field contains the value 'Jenkins\_Server'. An 'Add additional tags' button is visible next to the name field.

A collapsed section titled 'Application and OS Images (Amazon Machine Image)' is shown, with an 'Info' link. It contains a search bar and links for 'Recents', 'My AMIs', and 'Quick Start'. A note states: 'An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.'

At the bottom of the page, there are links for 'CloudShell', 'Feedback', 'Privacy', 'Terms', and 'Cookie preferences', along with a copyright notice: '© 2024, Amazon Web Services, Inc. or its affiliates.'

## Add security group rule for port 8080

The screenshot shows the AWS EC2 Inbound Security Group Rules configuration page. It displays two security group rules:

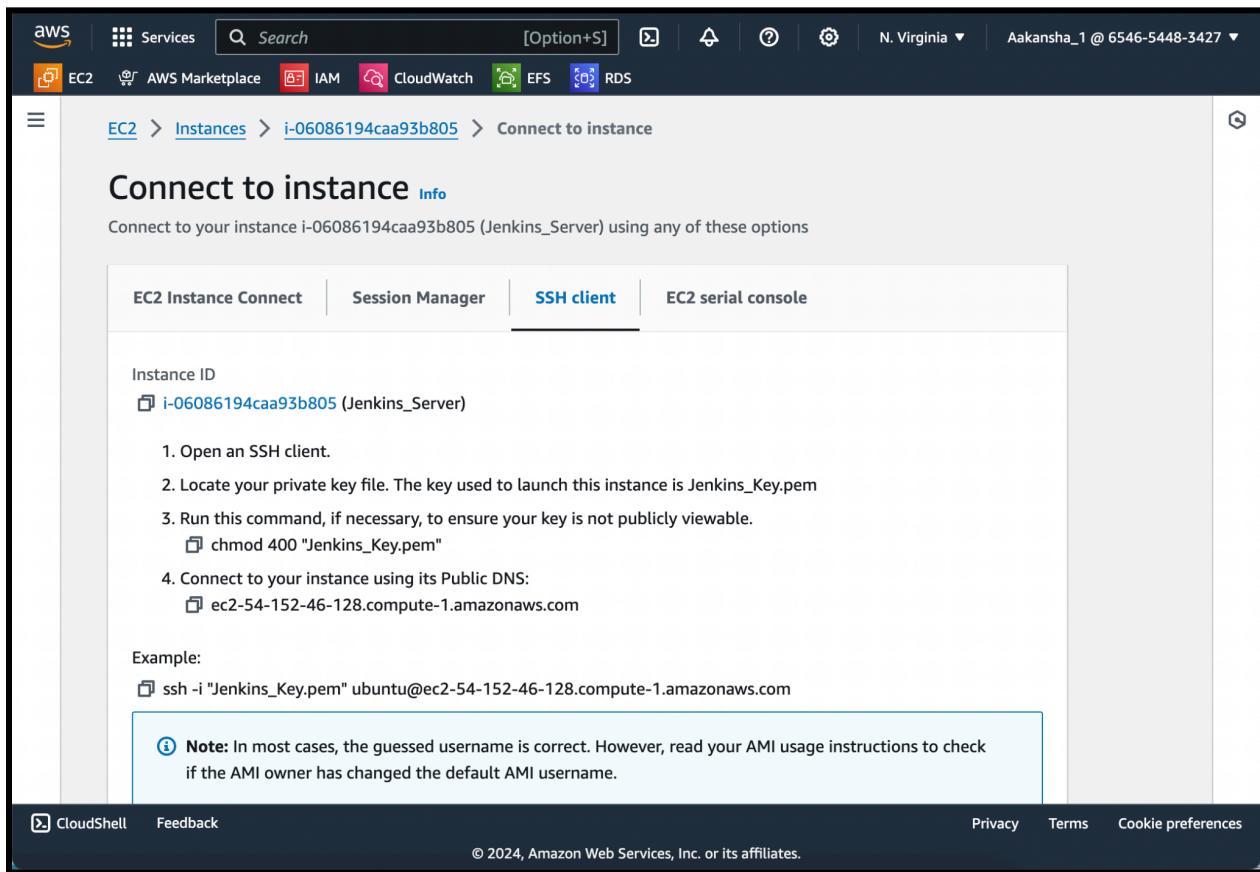
- Security group rule 1 (TCP, 22, 0.0.0.0/0):** Type: ssh, Protocol: TCP, Port range: 22. Source type: Anywhere, Source: 0.0.0.0/0. Description: e.g. SSH for admin desktop.
- Security group rule 2 (TCP, 8080, 0.0.0.0/0):** Type: Custom TCP, Protocol: TCP, Port range: 8080. Source type: Anywhere, Source: 0.0.0.0/0. Description: e.g. SSH for admin desktop.

A warning message at the bottom states: "⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only." There is a close button (X) next to the message.

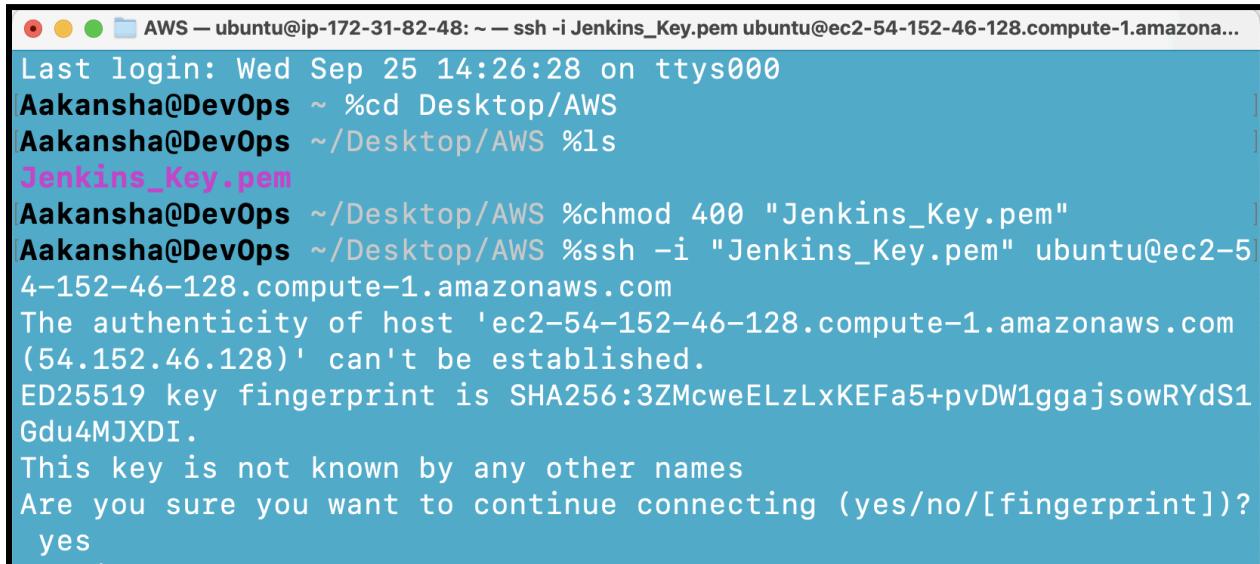
The screenshot shows the AWS EC2 Instances page. The left sidebar shows navigation options like EC2 Dashboard, EC2 Global View, Events, Instances, Images, Elastic Block Store, and Network & Security. The main area displays the Jenkins\_Server instance details:

- Instances (1/1):** Jenkins\_Server (i-0a786921da089e84b)
- Details:** Status: Running, Instance Type: t2.micro, Key Name: jenkins\_key, Launch Time: 2024/09/25.
- Instance summary:** Instance ID: i-0a786921da089e84b (Jenkins\_Server), Public IPv4 address: 3.1.221.238, Private IPv4 address: 172.31.29.59, Instance state: Running.
- Networking:** Public IPv4 DNS: ec2-3-1-221-238.ap-southeast-1.compute.amazonaws.com.

## Connect to the EC2 Instance



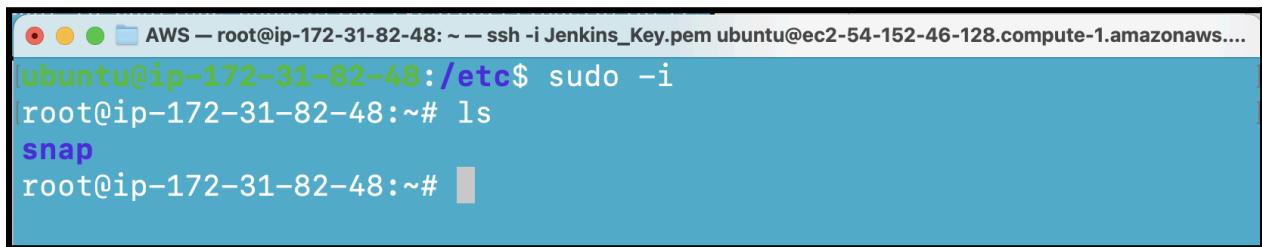
The screenshot shows the AWS Management Console interface for connecting to an EC2 instance. The top navigation bar includes the AWS logo, Services (selected), a search bar, and account information (N. Virginia, Aakansha\_1 @ 6546-5448-3427). Below the navigation is a secondary navigation bar with links for EC2, AWS Marketplace, IAM, CloudWatch, EFS, and RDS. The main content area shows the path: EC2 > Instances > i-06086194caa93b805 > Connect to instance. The title "Connect to instance" has an "Info" link. A sub-header says "Connect to your instance i-06086194caa93b805 (Jenkins\_Server) using any of these options". Below this are four tabs: EC2 Instance Connect, Session Manager, SSH client (selected), and EC2 serial console. The "SSH client" section contains the instance ID (i-06086194caa93b805) and a numbered list of steps: 1. Open an SSH client, 2. Locate your private key file (Jenkins\_Key.pem), 3. Run chmod 400 "Jenkins\_Key.pem", 4. Connect to your instance using its Public DNS (ec2-54-152-46-128.compute-1.amazonaws.com). An "Example:" section shows the command "ssh -i "Jenkins\_Key.pem" ubuntu@ec2-54-152-46-128.compute-1.amazonaws.com". A note in a callout box states: "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." At the bottom are links for CloudShell, Feedback, Privacy, Terms, and Cookie preferences.



```
AWS — ubuntu@ip-172-31-82-48: ~ — ssh -i Jenkins_Key.pem ubuntu@ec2-54-152-46-128.compute-1.amazonaws.com
Last login: Wed Sep 25 14:26:28 on ttys000
[Aakansha@DevOps ~ %cd Desktop/AWS
[Aakansha@DevOps ~/Desktop/AWS %ls
Jenkins_Key.pem
[Aakansha@DevOps ~/Desktop/AWS %chmod 400 "Jenkins_Key.pem"
[Aakansha@DevOps ~/Desktop/AWS %ssh -i "Jenkins_Key.pem" ubuntu@ec2-5
4-152-46-128.compute-1.amazonaws.com
The authenticity of host 'ec2-54-152-46-128.compute-1.amazonaws.com
(54.152.46.128)' can't be established.
ED25519 key fingerprint is SHA256:3ZMcweELzLxKEFa5+pvDW1ggajsowRYdS1
Gdu4MJXDI.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])?
yes
```

**Become root user and execute the jenkins installation commands from: jenkins.io**

[ <https://www.jenkins.io/doc/book/installing/linux/#debianubuntu> ]



```
AWS — root@ip-172-31-82-48: ~ -- ssh -i Jenkins_Key.pem ubuntu@ec2-54-152-46-128.compute-1.amazonaws....  
[ubuntu@ip-172-31-82-48: /etc$ sudo -i  
[root@ip-172-31-82-48:~# ls  
snap  
root@ip-172-31-82-48:~#
```

## Commands to Execute

### 1. Update the system package index

- [sudo apt-get update](#)

**Purpose:** This command updates the local package index on your system by fetching the latest package information from all the repositories configured in `/etc/apt/sources.list`. It ensures that you get the latest available versions when you install new software.

### 2. Install OpenJDK 11

- [sudo apt install openjdk-11-jdk -y](#)

**Purpose:** Jenkins runs on Java, so you need to install a Java Development Kit (JDK). This command installs OpenJDK 11, which is the recommended version for Jenkins.

The `-y` flag automatically answers "yes" to any prompts during installation, so the process continues without manual intervention.

### 3. Download Jenkins keyring

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

**Purpose:** This command downloads Jenkins' GPG key and saves it to `/usr/share/keyrings/jenkins-keyring.asc`. GPG keys are used to verify the authenticity and integrity of packages. This ensures that the Jenkins packages you're installing are from a trusted source.

- `wget`: A utility used to download files from the web.
- `-O`: Specifies the output file location (`/usr/share/keyrings/jenkins-keyring.asc`).
- The URL points to the official Jenkins key for package signing.

### 4. Add the Jenkins repository

- `echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/" | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null`

**Purpose:** This command adds Jenkins' official repository to your system so that you can install Jenkins using `apt`.

- `echo`: Outputs the repository information to be added.
- The repository URL `https://pkg.jenkins.io/debian-stable` is Jenkins' official stable repository.
- `signed-by=/usr/share/keyrings/jenkins-keyring.asc`: Ensures that the repository's packages are verified by the GPG key you downloaded earlier.
- `sudo tee /etc/apt/sources.list.d/jenkins.list`: Writes the repository info to a new file `/etc/apt/sources.list.d/jenkins.list`.

## 5. Update the package index again

- **sudo apt-get update**

**Purpose:** This command updates the local package index again, but this time it includes the new Jenkins repository. Now, your system will know about the Jenkins packages you can install.

## 6. Install Jenkins

- **sudo apt-get install jenkins -y**

**Purpose:** This command installs Jenkins on your system from the repository you added earlier. The **-y** flag ensures that any prompts during the installation process are automatically confirmed, making the installation process smooth.

## Summary:

- **apt-get update**: Fetches updated package info.
- **apt install openjdk-11-jdk**: Installs Java 11, which is required by Jenkins.
- **wget**: Downloads Jenkins' GPG key to verify packages.
- **echo + tee**: Adds the Jenkins repository to your system's package manager.
- **apt-get update**: Updates the package list again to include Jenkins.
- **apt-get install jenkins**: Installs Jenkins.

Once installed, Jenkins will typically run as a service, and you can start managing it via a web interface.

# After executing Installation Commands

## Check the status of the jenkins service

```
AWS — root@ip-172-31-82-48: ~ -- ssh -i Jenkins_Key.pem ubuntu@ec2-54-152-46-128.compute-1.amazonaws....  
root@ip-172-31-82-48:~# systemctl status jenkins  
● jenkins.service - Jenkins Continuous Integration Server  
  Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled)  
  Active: active (running) since Wed 2024-09-25 09:08:10 UTC; 2m 2s ago  
    Main PID: 3729 (java)  
      Tasks: 37 (limit: 1130)  
     Memory: 282.8M (peak: 303.8M)  
       CPU: 12.297s  
      CGrou... /system.slice/jenkins.service  
          └─ 3729 /usr/bin/java -Djava.awt.headless=true -jar /us...  
  
Sep 25 09:08:05 ip-172-31-82-48 jenkins[3729]: This may also be fou...>  
Sep 25 09:08:05 ip-172-31-82-48 jenkins[3729]: *****...>  
Sep 25 09:08:05 ip-172-31-82-48 jenkins[3729]: *****...>  
Sep 25 09:08:05 ip-172-31-82-48 jenkins[3729]: *****...>  
Sep 25 09:08:06 ip-172-31-82-48 jenkins[3729]: 2024-09-25 09:08:06.>
```

The directory `/var/lib/jenkins` contains Jenkins' configuration files, plugins, job data, and other important runtime data.

```
root@ip-172-31-82-48:~# ls /var/lib/jenkins/  
config.xml                      secret.key  
hudson.model.UpdateCenter.xml    secret.key.not-so-secret  
jenkins.telemetry.Correlator.xml secrets  
jobs                             updates  
nodeMonitors.xml                 userContent  
plugins                          users  
root@ip-172-31-82-48:~# id jenkins  
uid=111(jenkins) gid=113(jenkins) groups=113(jenkins)  
root@ip-172-31-82-48:~#
```

## Copy public IP of the instance and run it on the browser at port 8080

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with links like EC2 Dashboard, EC2 Global View, Events, and Instances (which is expanded to show Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations). The main area shows a table with one instance:

Name	Instance ID	Instance state	Instance type	Status
Jenkins_Server	i-06086194caa93b805	Running	t2.micro	2/2

Below the table, the instance details for i-06086194caa93b805 (Jenkins\_Server) are shown. Under the Instance summary section, the Public IPv4 address is listed as 54.152.46.128, with a link to open the address and a button to copy it to clipboard.

You will see the Jenkins Sign in page

The screenshot shows a web browser window with the URL 54.152.46.128:8080/login?from=%2F. The page title is "Sign in [Jenkins]". The content is titled "Unlock Jenkins" and includes the following text:

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**

At the bottom right is a "Continue" button.

**Get the initial password from this path using cat command:  
/var/lib/jenkins/secrets/initialAdminPassword**

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
AWS — root@ip-172-31-82-48: ~ ssh -i Jenkins_Key.pem ubuntu@ec2-54-152-46-128.compute-1.amazonaws....
root@ip-172-31-82-48:~# cat /var/lib/jenkins/secrets/initialAdminPas
sword
d6b682c7f1754e598f1c081a097ccb75
root@ip-172-31-82-48:~#
```

**Plugins extend Jenkins to enhance its functionality for specific use cases. Install suggested plugins for now.**

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.

## Plugin Installation Started

Getting Started

### 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

```
** Pipeline: Model API
** Pipeline: Declarative Extension Points API
** Branch API
** Pipeline: Multibranch
** Pipeline: Stage Tags Metadata
** Pipeline: Input Step
** Pipeline: Declarative
Pipeline
** Java JSON Web Token (JJWT)
** GitHub API
** Mina SSHD API :: Common
** Mina SSHD API :: Core
** Gson API
** Git client
** - required dependency
```

Jenkins 2.462.2

## Create account for the admin user

Getting Started

### Create First Admin User

Username  
Aakansha

Password  
.....

Confirm password  
.....

Full name  
Aakansha

E-mail address  
aakansha@devops.com

Jenkins 2.462.2

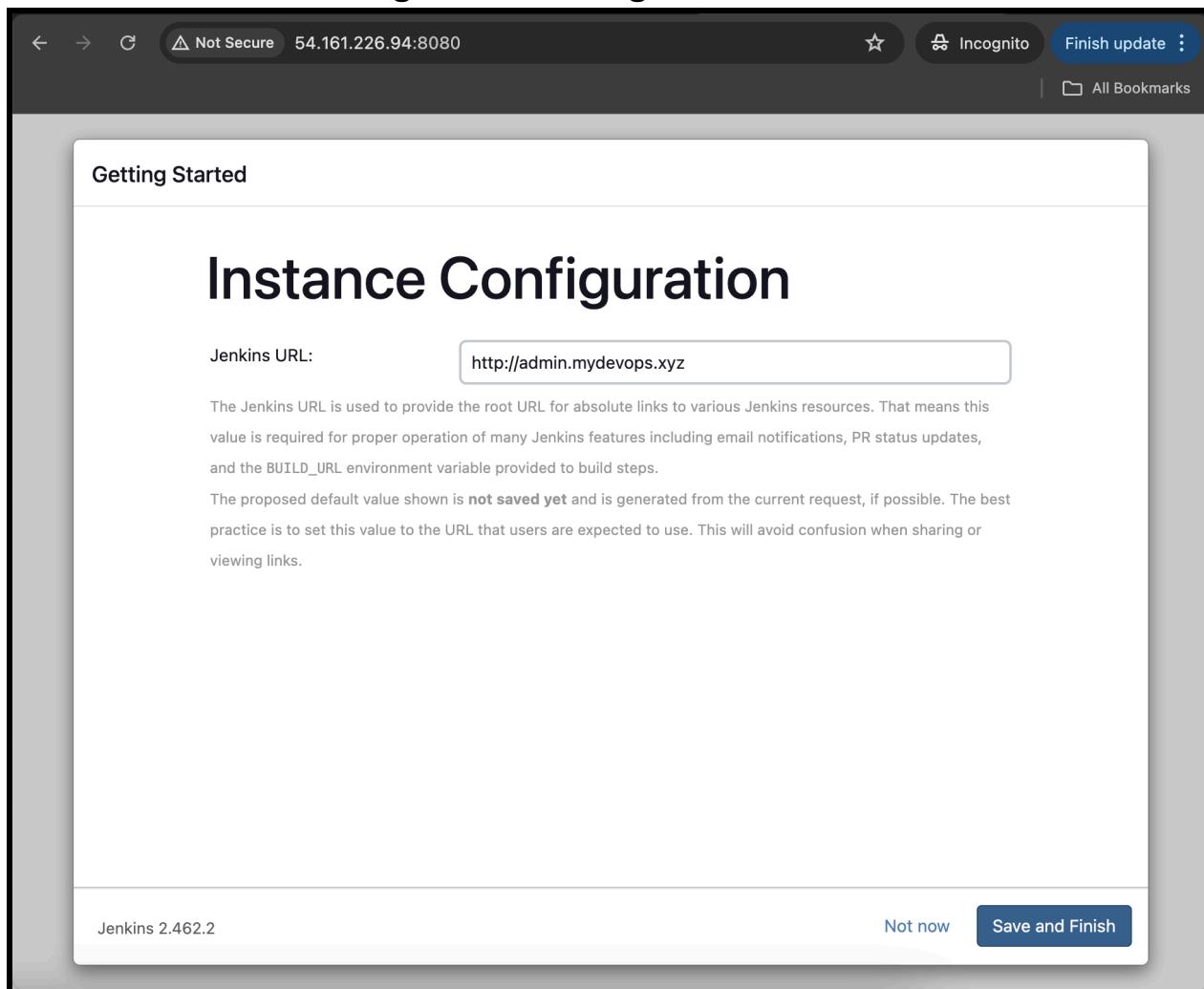
Skip and continue as admin

Save and Continue

**You get the option to set the Jenkins URL during the initial setup or later in the Jenkins configuration:**

- 1. Initial Setup:** After installing Jenkins and completing the initial setup wizard, Jenkins will prompt you to set the Jenkins URL under Configure System. This is used for generating links in notifications (like emails or webhook payloads).
- 2. Post-Installation Configuration:**
  - Go to Manage Jenkins > Configure System.
  - Scroll down to the Jenkins Location section.
  - There, you can set the Jenkins URL, which will be used as the base URL for all Jenkins links.

**You can modify this URL anytime through Manage Jenkins if your server or network configuration changes.**





A screenshot of a web browser window. The address bar shows "Not Secure 54.161.226.94:8080". The main content area has a light gray header with the text "Getting Started". Below this, a large black header displays the text "Jenkins is ready!". Underneath, a smaller text says "Your Jenkins setup is complete." followed by a blue button labeled "Start using Jenkins". At the bottom left of the content area, there is a small footer with the text "Jenkins 2.462.2". The browser interface includes standard navigation buttons (back, forward, search) and a toolbar with icons for star, incognito, and finish update.

**Congratulations! Your Jenkins is ready to use 😊**



← → G Not Secure 54.161.226.94:8080 ⚙️ ☆ 🔍 Incognito Finish update ⋮ | All Bookmarks

# Jenkins

Search (⌘+K) ? 📡 1 🔒 1 🌐

Dashboard >

+ New Item Add description

Build History Manage Jenkins My Views

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.

Start building your software project

Build Queue Create a job +  
No builds in the queue.

Build Executor Status Set up a distributed build  
1 Idle Set up an agent +  
2 Idle Configure a cloud +

Learn more about distributed builds ?

REST API Jenkins 2.462.2

