# Installing Jenkins

**Prerequisites**
Before continuing with this tutorial, make sure you have ubuntu machine created and logged in as a user with sudo privileges.
**Reference URL:** https://www.digitalocean.com/community/tutorials/how-to-install-jenkins-on-ubuntu-18-04 OR

To install Jenkins on your Ubuntu system, follow these steps:

1. **Install Java.**
   Since Jenkins is a Java application, the first step is to install Java. Update the package index and install the Java 8 OpenJDK package with the following commands:

2. **Add the Jenkins Debian repository.**
   Import the GPG keys of the Jenkins repository using the following
   ```
   wget -q -O - https://pkg.jenkins.io/debian/jenkins.io.key | sudo apt-key add -
   ```

   **Command:**
   ```
   sudo apt update
   sudo apt install openjdk-8-jdk
   ```

   The command above should output OK which means that the key has been successfully imported and packages from this repository will be considered trusted.

   **Next, add the Jenkins repository to the system with:**
   ```
   sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'
   ```

3. **Install Jenkins.**
   Once the Jenkins repository is enabled, update the apt package list and install the latest version of Jenkins by typing:
   ```
   sudo apt update
   sudo apt install jenkins
   ```

   Jenkins service will automatically start after the installation process is complete. You can verify it by printing the service status:
   ```
   systemctl status jenkins
   ```

# Setting Up Docker in Jenkins Server

1. **Install Docker**
   **Reference URL:** https://www.digitalocean.com/community/tutorials/how-to-install-and-use-docker-on-ubuntu-18-04
2. **Add Jenkins User to docker group**
   ```
   sudo usermod -aG docker jenkins
   ```
3. **Restart Jenkins**
   ```
   sudo systemctl restart jenkins
   ```

# Setup Kubernetes Cluster with kops on AWS on another Ec2 machine

**Reference URL:** https://github.com/kubernetes/kops/blob/master/docs/getting_started/aws.md

# Install kubectl and add kubeconfig in Jenkins server

**Reference URL:** https://github.com/kubernetes/kops/blob/master/docs/install.md

1. **Install Kubectl in Jenkins Server**

```
curl -Lo kubectl https://storage.googleapis.com/kubernetes-release/release/$(curl -s
https://storage.googleapis.com/kubernetes-
release/release/stable.txt)/bin/darwin/amd64/kubectl
chmod +x ./kubectl
sudo mv ./kubectl /usr/local/bin/kubectl
```

2. **Switch to jenkins user**

```
sudo -i -u jenkins
```

3. **Create .kube folder in Jenkins home directory**

```
cd ~
mkdir .kube
```

4. **Create config file and copy config file content from Kubernetes Cluster master machine and save the content.**

```
vi .kube/config
```

5. **We can use kubectl commands directly in pipe line script, kubectl commands will get executed in Kubernetes cluster directly.**

```
stage("Deploy To Kubernetes Cluster"){
                        sh "kubectl apply -f namespace-phpapp.yml"
                }
```