**Configuring Docker Containers as Jenkins Agents**

**1. Prerequisites**

* **Jenkins Master** (installed or running in a container).
* **Docker Daemon** installed and running on **Jenkins master host**.
* **Jenkins user** added to the Docker group (to access Docker socket).

**Commands (for Ubuntu):**

# Install Docker

sudo apt-get update

sudo apt-get install -y docker.io

# Add Jenkins user to Docker group

sudo usermod -aG docker jenkins

# Restart Jenkins and Docker

sudo systemctl restart docker

sudo systemctl restart jenkins

Verify Docker access:

docker info

**2. Install Jenkins Plugins**

1. Go to **Manage Jenkins → Manage Plugins → Available**.
2. Install:
   * **Docker plugin**.
   * **Docker Pipeline plugin**.
3. **Restart Jenkins** if required.

**3. Configure Docker Cloud in Jenkins**

1. **Go to:**  
   Manage Jenkins → Manage Nodes and Clouds → Configure Clouds → Add a new cloud → Docker.
2. **Docker Cloud Details:**

| **Field** | **Value** |
| --- | --- |
| **Name** | docker-cloud |
| **Docker Host URI** | unix:///var/run/docker.sock |
| **Server Credentials** | (Leave blank for local Docker) |
| **Enabled** | **✔️ Check this box** |
| **Container Cap** | 100 (or adjust as needed) |
| **Expose DOCKER\_HOST** | Unchecked (unless DinD needed) |

1. Click **Test Connection**. It should show the Docker API version.

**4. Configure Docker Agent Template**

1. Still in **Docker Cloud configuration**, click **Add Docker Template**.
2. **Template Settings:**

| **Field** | **Value** |
| --- | --- |
| **Labels** | docker-agent |
| **Docker Image** | jenkins/inbound-agent:latest (or custom) |
| **Remote FS Root** | /home/jenkins |
| **Connect Method** | Attach Docker container |
| **User** | Leave blank (defaults to image user) |
| **Pull Strategy** | Pull once and update |
| **Retention Strategy** | Remove after use |
| **Volumes (Optional)** | /var/run/docker.sock:/var/run/docker.sock (if **DinD**) |

You can Create Your Own Custom Agent Using A Dockerfile like Below.

FROM jenkins/inbound-agent:latest

# Switch to root user to install packages

USER root

# Install Java 17 (headless) and Maven

RUN apt-get update && \

apt-get install -y openjdk-17-jre-headless maven && \

apt-get clean && \

rm -rf /var/lib/apt/lists/\*

# Set JAVA\_HOME environment variable

ENV JAVA\_HOME=/usr/lib/jvm/java-17-openjdk-amd64

ENV PATH=$JAVA\_HOME/bin:$PATH

# Switch back to Jenkins user

USER Jenkins

Build the Dockerimage

docker build -t your-username/imagename:latest

Push Docker Image

Docker login

docker push your-username/imagename:latest

**8. Test the Docker Agent with a Pipeline**

1. **Create a new Pipeline Job**.
2. Use this **Jenkinsfile**:

pipeline {

agent { label 'docker-agent' }

stages {

stage('Verify Agent') {

steps {

sh 'echo "Hello from Docker Agent!"'

sh 'whoami'

sh 'uname -a'

}

}

}

}