# Step 2: Prepare the EC2 Instance for AWS CodeDeploy

This document explains the detailed options and steps for preparing an EC2 instance to be used with AWS CodeDeploy to deploy a Flask application.

## 1. Launch the EC2 instance

- Go to the EC2 console and launch an instance.  
- Choose Amazon Linux 2023 AMI.  
- Select instance type (e.g., t2.micro for testing).  
- Create or use an existing key pair for SSH access.  
- In the security group, allow:  
 \* Port 22 (SSH) from your IP.  
 \* Port 8000 (Flask app) or port 80 if using a reverse proxy or ALB.

## 2. Attach IAM Role (Instance Profile)

The EC2 instance must have an IAM role attached to allow CodeDeploy to work properly:  
- Create an IAM role with trusted entity set to EC2.  
- Attach at least these policies:  
 \* AmazonS3ReadOnlyAccess (to fetch deployment bundles from S3).  
 \* AmazonSSMManagedInstanceCore (optional, if you want to use Systems Manager Session Manager).  
- Attach this IAM role to the EC2 instance.

## 3. Install CodeDeploy Agent

The CodeDeploy agent must be running on the EC2 instance:  
- SSH into the instance.  
- Update packages and install dependencies:  
 sudo dnf update -y  
 sudo dnf install -y ruby wget  
  
- Install the CodeDeploy agent (replace <region> with your AWS region):  
 curl -o codedeploy-agent.rpm https://aws-codedeploy-<region>.s3.<region>.amazonaws.com/latest/codedeploy-agent.noarch.rpm  
 sudo dnf install -y ./codedeploy-agent.rpm  
  
- Enable and start the agent:  
 sudo systemctl enable --now codedeploy-agent  
 systemctl status codedeploy-agent  
  
The status should show active (running).

## 4. (Optional) Install SSM Agent

Amazon Linux 2023 includes the SSM agent by default. Ensure the IAM role has the AmazonSSMManagedInstanceCore policy attached to allow remote management via Systems Manager.

## 5. Tag the Instance

CodeDeploy identifies EC2 instances by tags. In the EC2 console, add a tag such as:  
- Key: CodeDeploy  
- Value: FlaskDemo  
  
When creating a CodeDeploy Deployment Group, use this tag to target the instance.

## 6. Verification Commands

To verify the setup, run the following commands on the EC2 instance:  
- Check agent service status:  
 systemctl status codedeploy-agent  
  
- Ensure it starts on boot:  
 sudo systemctl enable codedeploy-agent  
  
- Check installed package/version:  
 rpm -q codedeploy-agent  
  
- Tail the CodeDeploy agent log:  
 sudo tail -n 50 /var/log/aws/codedeploy-agent/codedeploy-agent.log