

Let's walk through **simple steps** to add a Jenkins agent (a worker node) to your Jenkins master (controller) when running on your laptop.

◆ Prerequisites

- Jenkins master (controller) is already installed on your laptop (usually accessible at <http://localhost:8080>).
 - Java installed on the agent machine (at least the same major version as Jenkins recommends).
 - Network connectivity between master and agent (they must reach each other over TCP).
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◆ Steps to Add Jenkins Agent

1. Prepare the Agent Machine

Install Java (JDK or JRE):

```
java -version
```

If missing, install it (on Ubuntu):

```
sudo apt update && sudo apt install -y openjdk-11-jdk
```

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2. Create a New Node in Jenkins

1. Open Jenkins web UI → **Manage Jenkins** → **Nodes & Clouds** → **New Node**.
2. Enter a **node name** (e.g., [agent1](#)) → Select **Permanent Agent** → Click OK.
3. Configure:
 - **# of executors**: usually [1](#) (how many builds it can run in parallel).
 - **Remote root directory**: e.g., [/home/jenkins/agent](#) (a working directory on agent).

- **Labels:** e.g., `agent1` (used in pipelines with `agent { label 'agent1' }`).
 - **Usage:** “Use this node as much as possible” (default).
 - **Launch method:**
 - Choose **Launch agent by connecting it to the master** if you’ll run the agent manually.
 - Or **Launch agent via SSH** if you want Jenkins to SSH into the agent machine.
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3. Start the Agent

If you chose “**Launch agent by connecting it to the master**”:

1. Save the node configuration.
2. Jenkins will show connection details (a `.jnlp` file and an agent JAR).

On the agent machine, download the JAR:

```
wget http://<JENKINS_MASTER_IP>:8080/jnlpJars/agent.jar
```

- 3.

Run the agent:

```
java -jar agent.jar -jnlpUrl  
http://<JENKINS_MASTER_IP>:8080/computer/agent1/jenkins-agent.jnlp  
-secret <SECRET_KEY> -workDir "/home/jenkins/agent"
```

4. (You’ll see the exact command in Jenkins UI under the node details.)
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4. Verify

- Go back to Jenkins → **Nodes**.
- `agent1` should show as **online** (green).

Run a test pipeline with:

```
pipeline {  
  agent { label 'agent1' }  
  stages {  
    stage('Test') {  
      steps {  
        sh 'echo Hello from Agent1'  
      }  
    }  
  }  
}
```

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