

**Practice for Lesson 5:  
Understanding of Parallel  
Jenkins Jobs and Jenkins  
Slave on AWS**

## Practices for Lesson 5

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### Overview

In these practices, you will learn how to Build and Deploy an Application to Webserver using Jenkins Pipeline. Further create a parallel Agent Pipeline Job on Jenkins.

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## Practice 5-2: Create a Parallel Agent Pipeline Job on Jenkins

### Overview

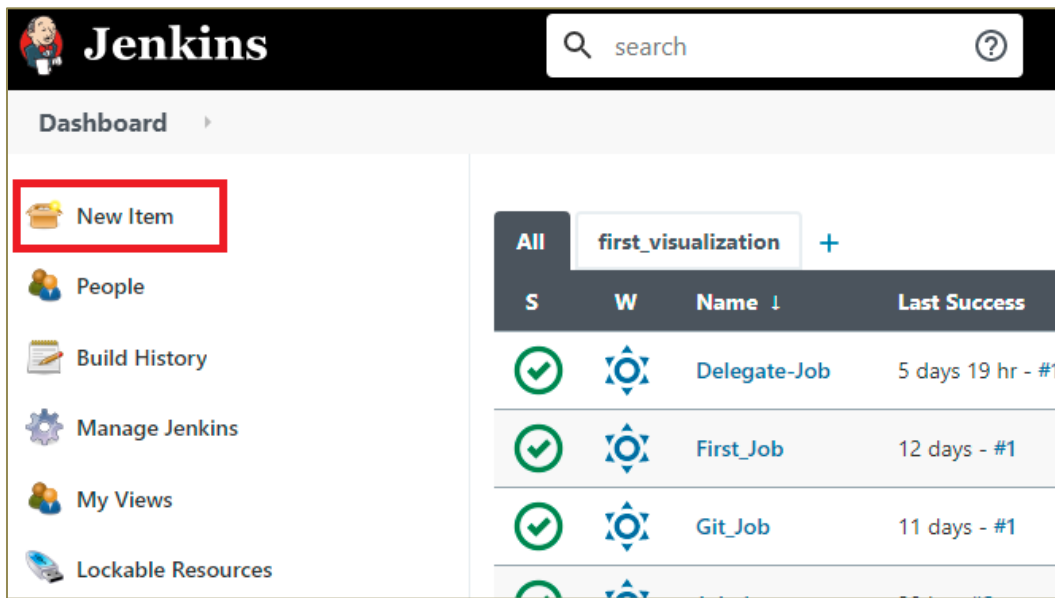
In this practice, you will learn how to create the Parallel Agent Pipeline Job on Jenkins instance using as sample example.

### Assumptions

You should have completed the Practice of Lesson 5-1.

### Tasks

1. Create a Parallel Agent Pipeline Job on Jenkins instance.
  - a. In the Jenkins Dashboard, navigate to main menu and select **New Item** to create a Parallel Agent Pipeline as shown below.





- b. Provide the **name** for the Pipeline, further select **Pipeline** and click **OK** as shown below.


**Enter an item name**

Parallel\_Agent\_Pipeline

» Required field


**Freestyle project**  
 This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.


**Maven project**  
 Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.


**Pipeline**  
 Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**OK**

- c. Navigate to **Pipeline**, select **Pipeline script** under **Definition** as shown below. Copy the Groovy script provided below and paste it in the **Script** block as shown below. Select the checkbox of **Use Groovy Sandbox** and click **Save**.

```

pipeline {
    agent none
    stages {
        stage('Non-Parallel Stage') {
            agent {
                label "master"
            }
            steps {
                echo "This stage will be executed first";
            }
        }
        stage('Run Tests') {
            steps {
                echo "Building the checked-out project!";
            }
        }
        stage('Unit-Test') {
            parallel {
                stage('Test on Agent') {

```

```

        agent{
            label "AWS_instance_Node"
        }
        steps {
            echo "Task1 on Agent";
        }
    }
stage('Test On master') {
    agent {
        label "master"
    }
    steps {
        echo "Task1 on Master";
    }
}
}
}
}
```

GeneralBuild TriggersAdvanced Project OptionsPipeline

## Pipeline

Definition

Pipeline script

Script

```
1 pipeline {
2   agent none
3   stages {
4     stage('Non-Parallel Stage') {
5       agent {
6         label "master"
7       }
8       steps {
9         echo "This stage will be executed first";
10      }
11    }
12    stage('Run Tests') {
13      steps {
14        echo "Building the checked-out project!";
15      }
16    }
17    stage('Unit-Test') {
18      parallel {
19        stage('Test on Agent') {
20          agent{
```

☒ Use Groovy Sandbox

Save

Apply

d. Verify that the Agent node is active in the Jenkins as shown below.

Dashboard > Nodes >

Back to Dashboard

Manage Jenkins

New Node


Configure Clouds

Node Monitoring

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free
	AWS_instance_Node	Linux (amd64)	In sync	6.36 GB	
	master	Linux (amd64)	In sync	13.61 GB	
Data obtained		1 min 13 sec	1 min 13 sec	1 min 13 sec	
<div>Refresh status</div>					

**Note:** If the connection is Disconnected follow the steps as mentioned in Practice 3-2.

i. In Jenkins, click on the agent node and copy the code as shown below.

 **Agent** [Mark this node temporarily offline](#)

## AWS\_instance\_Node

Connect agent to Jenkins one of these ways:

- [Launch](#) Launch agent from browser
- Run from agent command line:

```
java -jar agent.jar -jnlpUrl
http://34.208.77.168:8080/computer/AWS_instance_Node/jenkins-agent.jnlp -secret
f293bf0b6b737573ae5ccc822c24779c22054fdc6a3424a7b232f60e6f328625 -workDir
"/home/ec2-user/jenkins"
```

Run from agent command line, with the secret stored in a file:

```
echo f293bf0b6b737573ae5ccc822c24779c22054fdc6a3424a7b232f60e6f328625 > secret-file
java -jar agent.jar -jnlpUrl
http://34.208.77.168:8080/computer/AWS_instance_Node/jenkins-agent.jnlp -secret
@secret-file -workDir "/home/ec2-user/jenkins"
```

## Projects tied to AWS\_instance\_Node

None

ii. Open Putty terminal connected to the **agent-node** and paste the command to execute as shown below.


```
[ec2-user@ip-172-31-26-239 ~]$ java -jar agent.jar -jnlpUrl http://34.208.77.168:8080/computer/AWS_instance_Node/jenkins-agent.jnlp -secret f293bf0b6b737573ae5ccc822c24779c22054fdc6a3424a7b232f60e6f328625 -workDir "/home/ec2-user/jenkins"
Apr 15, 2021 10:29:23 AM org.jenkinsci.remoting.engine.WorkDirManager initialize WorkDir
INFO: Using /home/ec2-user/jenkins/remoting as a remoting work directory
Apr 15, 2021 10:29:23 AM org.jenkinsci.remoting.engine.WorkDirManager setupLogging
INFO: Both error and output logs will be printed to /home/ec2-user/jenkins/remoting
Apr 15, 2021 10:29:23 AM hudson.remoting.jnlp.Main createEngine
INFO: Setting up agent: AWS_instance_Node
Apr 15, 2021 10:29:24 AM hudson.remoting.jnlp.Main$CuiListener <init>
INFO: Jenkins agent is running in headless mode.
Apr 15, 2021 10:29:24 AM hudson.remoting.Engine startEngine
INFO: Using Remoting version: 4.7
```

```

Apr 15, 2021 10:29:24 AM hudson.remoting.jnlp.Main$CuiListener status
INFO: Handshaking
Apr 15, 2021 10:29:24 AM hudson.remoting.jnlp.Main$CuiListener status
INFO: Connecting to 34.208.77.168:46111
Apr 15, 2021 10:29:24 AM hudson.remoting.jnlp.Main$CuiListener status
INFO: Trying protocol: JNLP4-connect
Apr 15, 2021 10:29:24 AM hudson.remoting.jnlp.Main$CuiListener status
INFO: Remote identity confirmed: 22:59:fd:4e:67:d9:7d:87:06:49:16:00:6c:13:c8:2d
Apr 15, 2021 10:29:25 AM hudson.remoting.jnlp.Main$CuiListener status
INFO: Connected

```

- iii. Open Jenkins dashboard and **refresh** the agent node page to verify the connection as shown below.





## Agent

Mark this node temporarily offline

# AWS\_instance\_Node

Agent is connected.

## Projects tied to AWS\_instance\_Node

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		Delegate-Job	2 days 19 hr - #1	2 days 19 hr - #2	0.89 sec	

Icon:

S M L

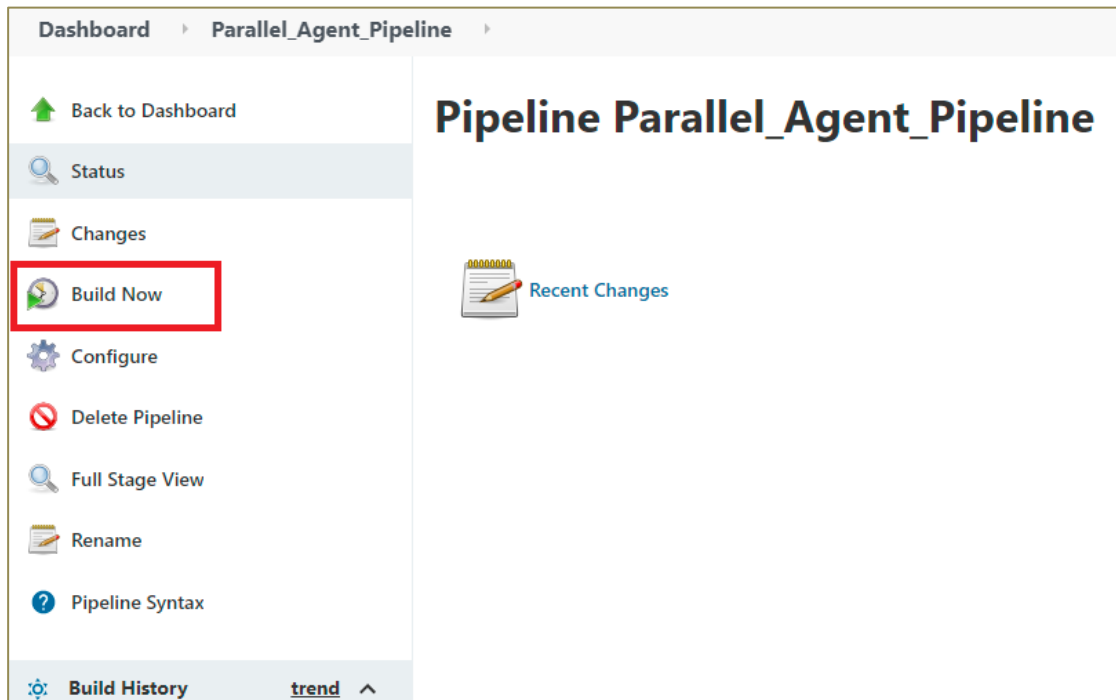
Legend

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

- e. **Parallel** Scripted pipeline is created successfully, click **Build Now** to execute the Parallel pipeline script as shown below.



- f. As shown below, **view** the **stages** of **pipeline** getting executed and click on the link under **Build History**.

**Stage View**

Non-Parallel Stage	Run Tests	Unit-Test	Test on Agent	Test On master
323ms	82ms	138ms	370ms	221ms

Average stage times:  
(Average full run time: ~2s)

**Build History**

Build	Status	Timestamp
#1	Success	Jun 18, 2021 7:37 AM

**Permalinks**

- Last build (#1), 8 min 45 sec ago
- Last stable build (#1), 8 min 45 sec ago
- Last successful build (#1), 8 min 45 sec ago

- g. Navigate to **Console Output** to view the execution output of the Parallel scripted pipeline.



Dashboard
Parallel\_Agent\_Pipeline
#1

Back to Project
Status
Changes
**Console Output**
View as plain text
Edit Build Information
Delete build '#1'
Restart from Stage
Replay
Pipeline Steps
Workspaces

**Console Output**

Started by user [oralabuser](#)  
Running in Durability level: MAX\_SURVIVABILITY  
[Pipeline] Start of Pipeline  
[Pipeline] stage  
[Pipeline] { (Non-Parallel Stage)  
[Pipeline] node  
Running on **Jenkins** in /var/lib/jenkins/workspace/Parallel\_Agent\_Pipeline  
[Pipeline] {  
[Pipeline] echo  
**This stage will be executed first**  
[Pipeline] }  
[Pipeline] // node  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] stage  
[Pipeline] { (Run Tests)  
[Pipeline] echo  
**Building the checked-out project!**  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] stage  
[Pipeline] { (Unit-Test)  
[Pipeline] parallel  
[Pipeline] { (Branch: Test on Agent)  
[Pipeline] { (Branch: Test On master)  
[Pipeline] stage  
[Pipeline] { (Test on Agent)  
[Pipeline] stage

[Pipeline] { (Branch: Test on Agent)  
[Pipeline] { (Branch: Test On master)  
[Pipeline] stage  
[Pipeline] { (Test on Agent)  
[Pipeline] stage  
[Pipeline] { (Test On master)  
[Pipeline] node  
[Pipeline] node  
[Test On master] Running on **Jenkins** in /var/lib/jenkins/workspace/Parallel\_Agent\_Pipeline  
[Pipeline] {  
[Pipeline] echo  
[Test On master] **Task1 on Master**  
[Pipeline] }  
[Test on Agent] Running on **AWS\_instance\_Node** in /home/ec2-user/jenkins/workspace/Parallel\_Agent\_Pipeline  
[Pipeline] // node  
[Pipeline] {  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] }  
[Pipeline] echo  
[Test on Agent] **Task1 on Agent**  
[Pipeline] }  
[Pipeline] // node  
[Pipeline] }  
[Pipeline] // stage  
[Pipeline] }  
[Pipeline] // parallel  
[Pipeline] // stage  
[Pipeline] End of Pipeline  
Finished: SUCCESS

2. Keep the Jenkins Dashboard, terminal and the AWS Management Console open for the next practice.