

Lab01

1) install Jenkins with docker image

| CONTAINER ID | IMAGE | COMMAND NAMES | CREATED | STATUS | PORTS |
|--------------|---------------------|---|--------------|------------|--|
| 3f7963b52ab8 | jenkins/jenkins:lts | "/usr/bin/tini -- /u..." agitated_sinoussi | 11 hours ago | Up 6 hours | 0.0.0.0:8080->8080/tcp, :::8080->8080/tcp, 50000/tcp |





2) I installed role based authorization plugin and configured it as my default authorization then created a new new user named JustViewer and assign this role to him

Authorization

Role-Based Strategy

Manage Roles

Global roles

| Role | Overall | Credentials | | | | Agent | | | | | | | Job | | | | | Run | | View | | | SCM | | | | | | | | | |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|---|
| | | Administer | Read | Create | Delete | ManageDomains | Update | View | Build | Configure | Connect | Create | Delete | Disconnect | Provision | Build | Cancel | Configure | Create | Delete | Discover | Move | Read | Workspace | Delete | Replay | Update | Configure | Create | Delete | Read | Tag |
|  Viewer | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |
|  admin | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  | |

Assign Roles

Global roles

| User/group | Viewer | admin |
|---------------------|-------------------------------------|-------------------------------------|
| abdelrahman mostafa | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Anonymous | <input type="checkbox"/> | <input type="checkbox"/> |
| ViewerUser | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

User/group to add ?

Add

 Jenkins

ViewerUser   log out

Dashboard >

 People

 Build History

 My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

creating credentials from private git repo

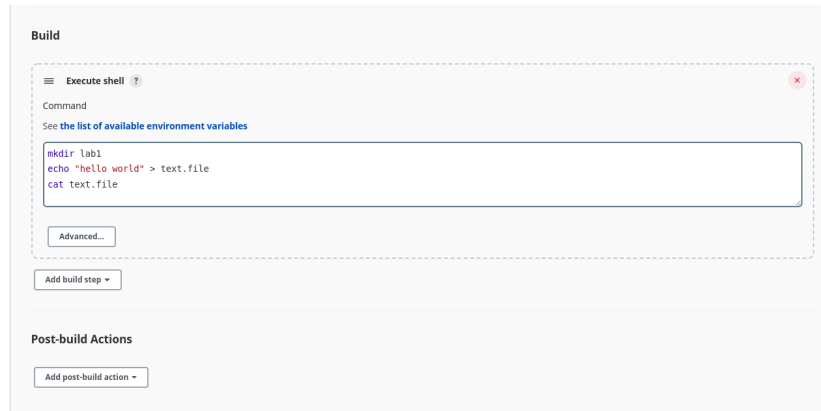
Credentials

| T | P | Store | Domain | ID | Name |
|---|---|---------|----------|-----------|------------------------|
| | | jenkins | (global) | git_token | abdelrahman-1111/***** |

3) creating free style pipeline and a private repo in GitHub then created a token which i created a new credentials using it to gain permission to access my private repo

The screenshot shows the Jenkins interface for a project named 'first_lab'. The top navigation bar includes the Jenkins logo, a search bar, and the user 'abdelrahman mostafa'. The left sidebar contains links to 'Back to Dashboard', 'Status', 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', and 'Rename'. The main content area displays 'Project first_lab' with options to 'Add description' and 'Disable Project'. Below this, there are sections for 'Workspace', 'Recent Changes', and 'Permalinks'. The 'Build History' section shows 'No builds' and a filter input. At the bottom, there are links to 'Atom feed for all' and 'Atom feed for failures'.

The screenshot shows the 'Source Code Management' configuration page in Jenkins. The 'Git' option is selected. The 'Repository URL' is set to 'https://github.com/abdelrahman-1111/bashScript_project.git'. The 'Credentials' dropdown is set to 'abdelrahman-1111/*****'. The 'Branches to build' section is set to '*/master'.



output log:

Console Output

```
Started by user abdelrahman mostafa
Running as SYSTEM
Building in workspace /var/jenkins_home/workspace/first_lab
The recommended git tool is: NONE
using credential git token
Cloning the remote Git repository
Cloning repository https://github.com/abdelrahman-1111/bashScript_project.git
> git init /var/jenkins_home/workspace/first_lab # timeout=10
Fetching upstream changes from https://github.com/abdelrahman-1111/bashScript_project.git
> git --version # timeout=10
> git --version # 'git version 2.30.2'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/abdelrahman-1111/bashScript_project.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/abdelrahman-1111/bashScript_project.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision a1e1aablaf23be710b9ae63301e33009f5f62f9 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f a1e1aablaf23be710b9ae63301e33009f5f62f9 # timeout=10
Commit message: "version-2.9"
First time build. Skipping changelog.
[first_lab] $ /bin/sh -xe /tmp/jenkins8393770494954964553.sh
+ mkdir lab1
+ echo hello world
+ cat text.file
hello world
Finished: SUCCESS
```

4) creating a declarative in jenkins GUI pipeline and assign a created public repo to it

Pipeline

Definition

Pipeline script

Script ?

```
1 pipeline {  
2   agent any  
3   stages {  
4     stage('Build') {  
5       steps {  
6         git 'https://github.com/abdelrahman-1111/Terraform-AWS.git'  
7         sh 'ls'  
8       }  
9     }  
10  }  
11 }  
12 }
```

☒ Use Groovy Sandbox ?

```
pipeline {  
  agent any  
  stages {  
    stage('Build') {  
      steps {  
        git 'https://github.com/abdelrahman-1111/Terraform-AWS.git'  
        sh "ls"  
      }  
    }  
  }  
}
```

Output log:

Console Output

```
Started by user abdelrahman mostafa
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/script-repo
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Build)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/abdelrahman-1111/Terraform-AWS.git
> git init /var/jenkins_home/workspace/script-repo # timeout=10
Fetching upstream changes from https://github.com/abdelrahman-1111/Terraform-AWS.git
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/abdelrahman-1111/Terraform-AWS.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/abdelrahman-1111/Terraform-AWS.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision e97bb8224113aa8b873075792b1b08219ab8548f (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f e97bb8224113aa8b873075792b1b08219ab8548f # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git checkout -b master e97bb8224113aa8b873075792b1b08219ab8548f # timeout=10
Commit message: "Update README.md"
First time build. Skipping changelog.
[Pipeline] sh
+ ls
README.md
database.tf
dev.tfvars
instances.tf
keys-generators.tf
lambda_code_ses.js
main.tf
network
prod.tfvars
securitygroups.tf
```

5) creating a scripted in jenkins GUI pipeline and assign a created public repo to it

```
node {
stage('Preparation') {
git 'https://github.com/abdelrahman-1111/Terraform-AWS.git'
}
stage('Build') {
sh "ls"
}
}
```

Output log:

Console Output

```
Started by user abdelrahman mostafa
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/script-repo
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Preparation)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/script-repo/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/abdelrahman-1111/Terraform-AWS.git # timeout=10
Fetching upstream changes from https://github.com/abdelrahman-1111/Terraform-AWS.git
> git --version # timeout=10
> git --version # 'git version 2.30.2'
> git fetch --tags --force --progress -- https://github.com/abdelrahman-1111/Terraform-AWS.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision e97bb8224113aa8b873075792b1b08219ab8548f (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f e97bb8224113aa8b873075792b1b08219ab8548f # timeout=10
> git branch -a -v --no-abbrev # timeout=10
> git branch -D master # timeout=10
> git checkout -b master e97bb8224113aa8b873075792b1b08219ab8548f # timeout=10
Commit message: "Update README.md"
> git rev-list --no-walk e97bb8224113aa8b873075792b1b08219ab8548f # timeout=10
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Build)
[Pipeline] sh
+ ls
README.md
database.tf
dev.tfvars
instances.tf
keys-generators.tf
lambda_code_ses.js
main.tf
network
prod.tfvars
```

6) creating the same script but in Jenkinsfile and push it to three diffrenet branches in a new created public repo then i created an multibranch pipline to detect the three branches with thier three Jenkinsfiles

<https://github.com/abdelrahman-1111/jenkins-lab.git>

here's the Jenkinsfile

The image shows a VS Code editor interface. The left sidebar displays the 'EXPLORER' view with a file tree containing 'Jenkinsfile' and 'myfile'. The main editor area shows the 'Jenkinsfile' with the following content:

```
1 pipeline {}
2   agent any
3   stages {
4     stage('Build') {
5       steps {
6         sh "ls"
7       }
8     }
9   }
10 }
```

The bottom panel shows the 'TERMINAL' view with the following output logs:

```
bod@machine-x:~/jenkins-lab$ git add .
bod@machine-x:~/jenkins-lab$ git add .
bod@machine-x:~/jenkins-lab$ git commit -m "upload jenkinsfile for main branch"
[main d8c9c09] upload jenkinsfile for main branch
1 file changed, 0 insertions(+), 0 deletions(-)
rename jenkinsfile => Jenkinsfile (100%)
bod@machine-x:~/jenkins-lab$ git push origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 292 bytes | 292.00 KiB/s, done.
Total 2 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/abdelrahman-1111/jenkins-lab.git
8e3c2ca..d8c9c09 main -> main
bod@machine-x:~/jenkins-lab$
```

output logs:

✓ Scan Multibranch Pipeline Log

```
Started by timer
[Fri Jul 22 17:18:00 UTC 2022] Starting branch indexing...
> git --version # timeout=10
> git --version # 'git version 2.30.2'
using GIT_ASKPASS to set credentials
> git ls-remote --symref -- https://github.com/abdelrahman-1111/jenkins-lab.git # timeout=10
> git rev-parse --resolve-git-dir /var/jenkins_home/caches/git-c123328b722f0e375e12f1bdc75a7a6/.git # timeout=10
Setting origin to https://github.com/abdelrahman-1111/jenkins-lab.git
> git config remote.origin.url https://github.com/abdelrahman-1111/jenkins-lab.git # timeout=10
Fetching & pruning origin...
Listing remote references...
> git config --get remote.origin.url # timeout=10
> git --version # timeout=10
> git --version # 'git version 2.30.2'
using GIT_ASKPASS to set credentials
> git ls-remote -h -- https://github.com/abdelrahman-1111/jenkins-lab.git # timeout=10
Fetching upstream changes from origin
> git config --get remote.origin.url # timeout=10
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress --prune -- origin +refs/heads/*:refs/remotes/origin/* # timeout=10
Checking branches...
  Checking branch prod
    'Jenkinsfile' found
    Met criteria
  No changes detected: prod (still at dfc9b7e128bd5a70d321bedab37c76916fd0d205)
  Checking branch main
    'Jenkinsfile' found
    Met criteria
  No changes detected: main (still at d8c9c095370a3d1972b2d5db82a1358ef9a6f478)
  Checking branch dev
    'Jenkinsfile' found
    Met criteria
  No changes detected: dev (still at 7f8ea868f705cf573c92faec0abbdec7e16657d)
Processed 3 branches
[Fri Jul 22 17:18:02 UTC 2022] Finished branch indexing. Indexing took 2 sec
Finished: SUCCESS
```

The three branches are ready to build



multi-branch

Folder name: multibranch-pipeline

Disable Multibranch Pipeline

Branches (3)

| S | W | Name | Last Success | Last Failure | Last Duration | |
|---|---|------|-----------------|--------------|---------------|---|
| ✓ | 🔄 | dev | 3 min 40 sec #3 | N/A | 3.5 sec | ▶ |
| ✓ | 🔄 | main | 10 min #1 | N/A | 12 sec | ▶ |
| ✓ | 🔄 | prod | 6 min 49 sec #3 | N/A | 3.6 sec | ▶ |

The last Question answer in the repo main branch