



PARSHVANATH CHARITABLE TRUST'S  
**A. P. SHAH INSTITUTE OF TECHNOLOGY**  
Department of Information Technology  
(NBA Accredited)



## Department of Information Technology

**Academic Year: 2025-26**

**Semester: V**

**Class / Branch: TEIT/Div C**

**Subject: DevOps Lab**

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**Student ID: 24204018**

**Date of Performance: 19/09/25**

**Date of Submission: 19/09/25**

## Experiment No. 06

**Aim: To implement Jenkins Master-Slave Architecture with Scaling**

```
Activities Terminal Sep 19 08:42
root@vora: /home/apsit

Group: /system.slice/jenkins.service
10274 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Sep 19 08:22:37 vora jenkins[10274]: 2025-09-19 02:52:37.845+0000 [id=56] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
Sep 19 08:22:38 vora jenkins[10274]: 2025-09-19 02:52:38.137+0000 [id=56] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
Sep 19 08:22:38 vora jenkins[10274]: 2025-09-19 02:52:38.138+0000 [id=56] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs updated
Sep 19 08:22:38 vora jenkins[10274]: 2025-09-19 02:52:38.165+0000 [id=71] INFO hudson.util.Retrier$Start: Attempt #1 to do the action check updates server
Sep 19 08:22:38 vora jenkins[10274]: 2025-09-19 02:52:38.180+0000 [id=51] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
Sep 19 08:22:38 vora jenkins[10274]: 2025-09-19 02:52:38.212+0000 [id=25] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and running
Sep 19 08:22:38 vora systemd[1]: Started Jenkins Continuous Integration Server.
Sep 19 08:22:50 vora jenkins[10274]: 2025-09-19 02:52:50.600+0000 [id=71] INFO h.n.DownloadService$Downloadable#load: Obtained the updated data file for hudson.t
Sep 19 08:22:52 vora jenkins[10274]: 2025-09-19 02:52:52.529+0000 [id=71] INFO h.n.DownloadService$Downloadable#load: Obtained the updated data file for hudson.t
Sep 19 08:22:54 vora jenkins[10274]: 2025-09-19 02:52:54.474+0000 [id=71] INFO h.n.DownloadService$Downloadable#load: Obtained the updated data file for hudson.p

[1]+ Stopped sudo systemctl status jenkins
root@vora:/home/apsit# sudo ufw status
Status: active

To Action From
--
8080 ALLOW Anywhere
OpenSSH ALLOW Anywhere
9000 ALLOW Anywhere
8080 (v6) ALLOW Anywhere (v6)
OpenSSH (v6) ALLOW Anywhere (v6)
9000 (v6) ALLOW Anywhere (v6)

root@vora:/home/apsit# sudo ufw allow 8080
Skipping adding existing rule
Skipping adding existing rule (v6)
root@vora:/home/apsit# sudo ufw enable
Firewall is active and enabled on system startup
root@vora:/home/apsit# sudo ufw status
Status: active

To Action From
--
8080 ALLOW Anywhere
OpenSSH ALLOW Anywhere
9000 ALLOW Anywhere
8080 (v6) ALLOW Anywhere (v6)
OpenSSH (v6) ALLOW Anywhere (v6)
9000 (v6) ALLOW Anywhere (v6)
```

Activities Google Chrome Sep 19 08:26

ITL503 DevOps Lab DIV-C x Manage Jenkins - Jenkins x Exp6\_Major\_Lab.pdf x You are signed in as 2420 x ChatGPT

localhost:8080/manage/ Relaunch to update

## Jenkins Manage Jenkins

### System Configuration

- System**  
Configure global settings and paths.
- Tools**  
Configure tools, their locations and automatic installers.
- Plugins**  
Add, remove, disable or enable plugins that can extend the functionality of Jenkins.
- Nodes**  
Add, remove, control and monitor the various nodes that Jenkins runs jobs on.
- Clouds**  
Add, remove, and configure cloud instances to provision agents on-demand.
- Appearance**  
Configure the look and feel of Jenkins.

### Security

- Security**  
Secure Jenkins; define who is allowed to access/use the system.
- Credentials**  
Configure credentials
- Credential Providers**  
Configure the credential providers and types
- In-process Script Approval**  
Allows a Jenkins administrator to review proposed scripts (written e.g. in Groovy) which run inside the Jenkins process and so could bypass security restrictions.

### Status Information

System Information System Log Load Statistics

Activities Google Chrome Sep 19 08:29

ITL503 DevOps Lab DIV-C x New node - Jenkins x Exp6\_Major\_Lab.pdf x You are signed in as 2420 x ChatGPT

localhost:8080/manage/computer/new Relaunch to update

## Jenkins Manage Jenkins Nodes New node

### New node

**Node name**

shravanisawant

**Type**

- ☒ **Permanent Agent**  
Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.

REST API Jenkins 2.516.3

Activities Google Chrome Sep 19 08:47

ITL503 DevOps Lab DIV- Security - Jenkins Exp6\_Major\_Lab.pdf You are signed in as 2420 ChatGPT

localhost:8080/manage/configureSecurity/ Relaunch to update

Jenkins Manage Jenkins Security

Authorization

Anyone can do anything

Markup Formatter

Markup Formatter

Plain text

Shows descriptions mostly as written. HTML unsafe characters like < and & are escaped to their respective character entities, and line breaks are converted to their HTML equivalent.

Agents

TCP port for inbound agents

☒ Fixed

60000

☐ Random

☐ Disable

Apply

Activities Google Chrome Sep 19 08:50



ITL503 DevOps Lab DIV- Nodes - Jenkins Exp6\_Major\_Lab.pdf You are signed in as 2420 ChatGPT

localhost:8080/computer/ Relaunch to update

Jenkins Nodes

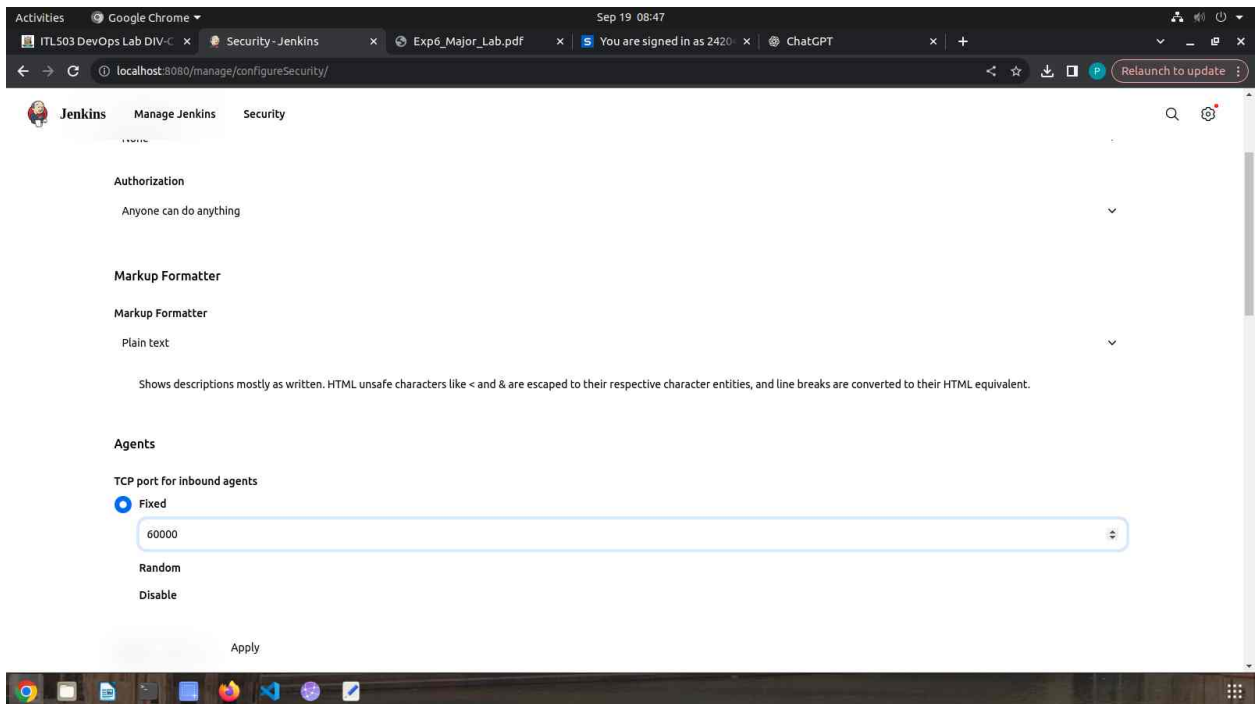
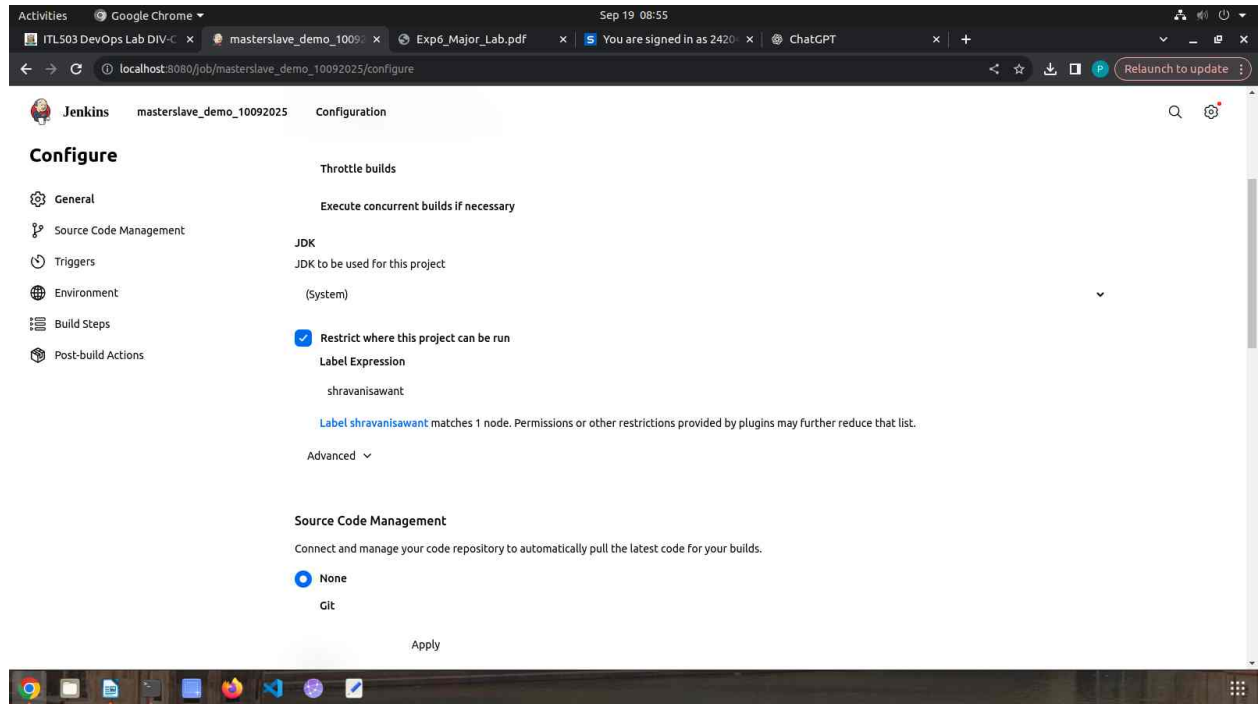
Nodes

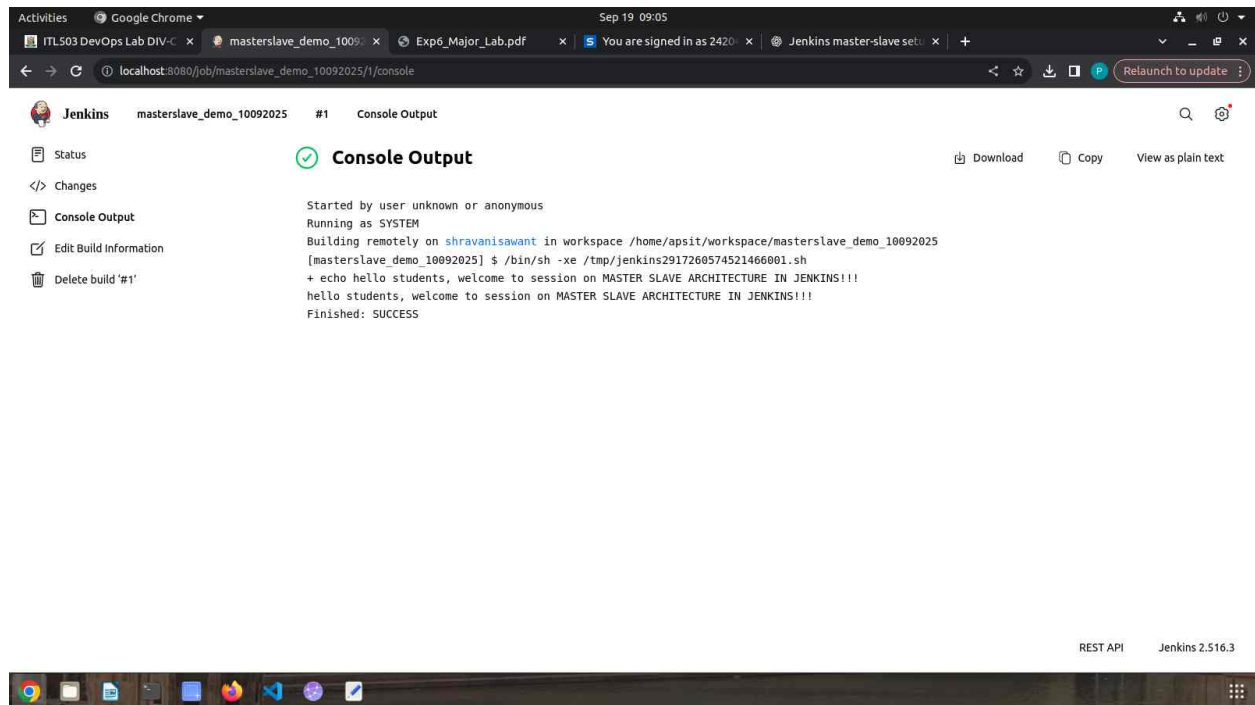
Configure Monitors

S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-in Node	Linux (amd64)	In sync	68.45 GiB	3.72 GiB	68.45 GiB	0ms
	shrvanisawant	Linux (amd64)	In sync	68.45 GiB	3.72 GiB	68.45 GiB	88ms
	last checked	1.4 sec	1.4 sec	1.3 sec	1.3 sec	1.3 sec	1.3 sec

Icon: S M L

Legend





## CONCLUSION:

Jenkins Master-Slave (Controller-Agent) architecture allows scalable, parallel, and environment-specific builds. It is essential for real-world CI/CD pipelines where multiple teams and platforms are involved.