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PRACTICAL 6

AIM: TO UNDERSTAND JENKINS MASTER SLAVE ARCHITECTURE AND SCALE YOUR JENKINS STANDALONE Implementation by Implementing Slave node.

Problem Stat:
To explore Jenkins Master Slave architecture to Scale Implementation and increase efficency to meet up the growing complexity and size of Software development process. The aim of the project is to gain a deeper understanding of Jenkins master-Slave architecture and to implement Slave node to improve the overall performance of Jenkin System.

1.

~~Jenkins~~

Theory:
Jenkins is an open source automation server that is widely used for continouse Integration and continouse Delivery of Software applications. One of the key feature of Jenkins is its ability to ~~describe~~ distribute workloads across multiple machine using Master Slave architecture

In the Jenkins master-Slave architecture, the master node is responsible for managing and scheduling Jobs

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While the slave nodes are responsible for executing actual jobs. The master node communicates with the slave nodes through a designated protocol such as SSH or JNLP

When a job is submitted to Jenkins the master node determines which slave node is best suited for job based on factor such as availability, workload and capabilities. The master node then sends the job to selected slave node, which executes the job and sends results back to master node

Using a master-slave architecture offers several benefits for jenkins users. It allows for efficient workload distribution, as multiple jobs can be executed simultaneously across multiple slave node. It also provides increased reliability and scalability as additional slave nodes can be added or removed as needed

In addition the master slave architecture enable users to run jobs on different platforms and operating system, as well as take advantage of specialized hardware or software configuration on the slave node

Overall jenkins master slave architecture is powerful feature that allows for efficient and scalable automation of software development and delivery workflows.

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Conclusion:

Thus, we have understood what Jenkins Master and Slave Architecture is along with the importance of Scalability while developing Software. We also learnt the steps to show scalability in our Jenkins setup by creating new slave node.

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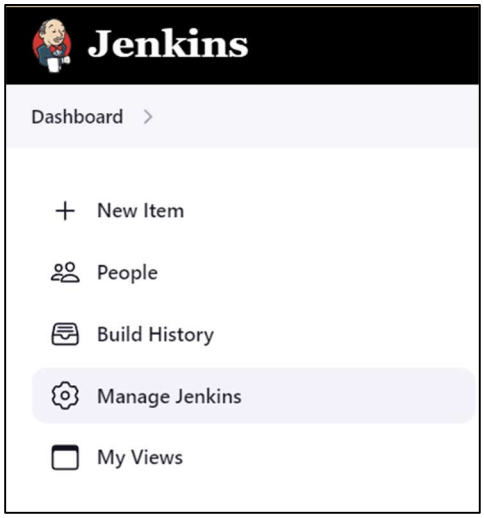
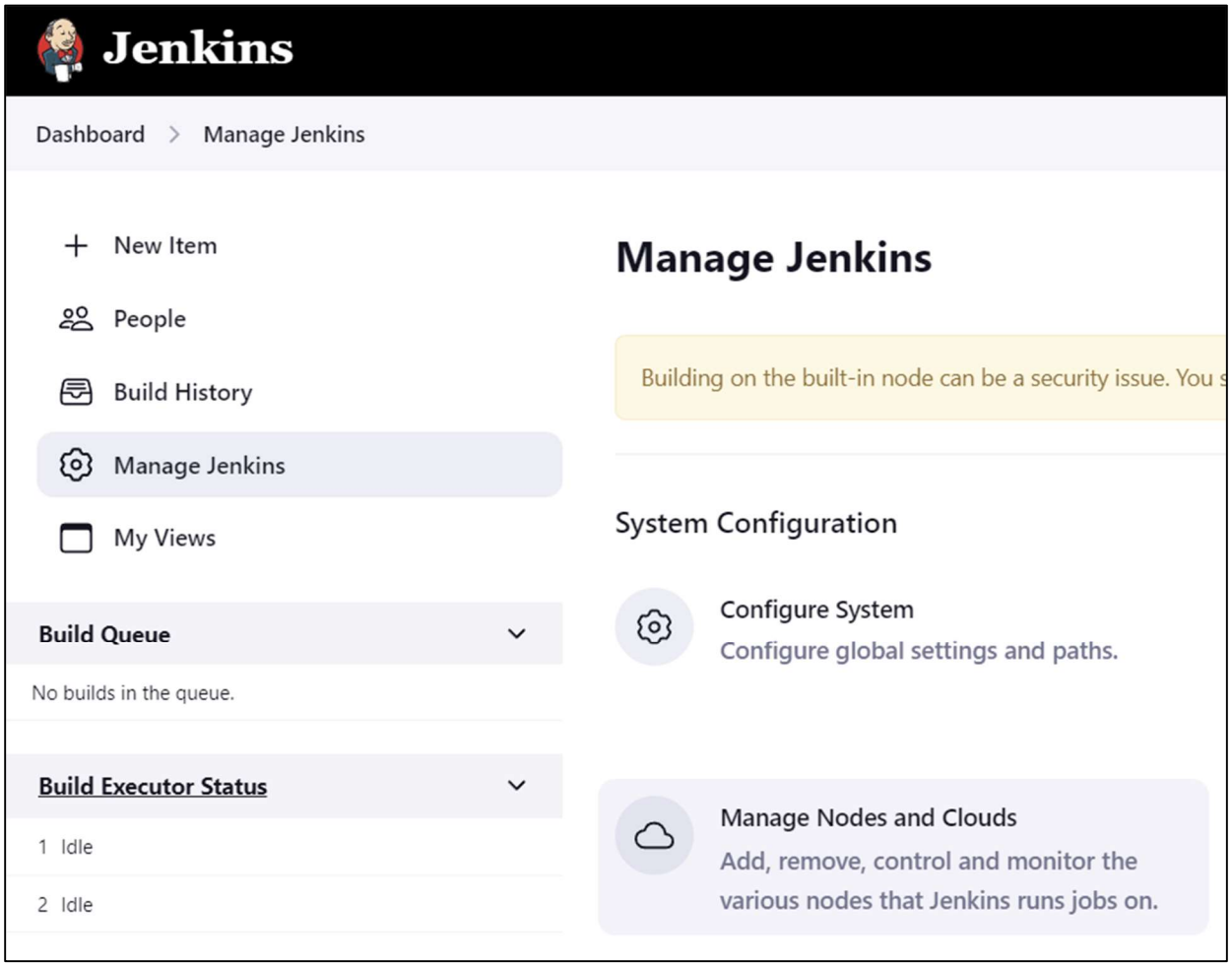
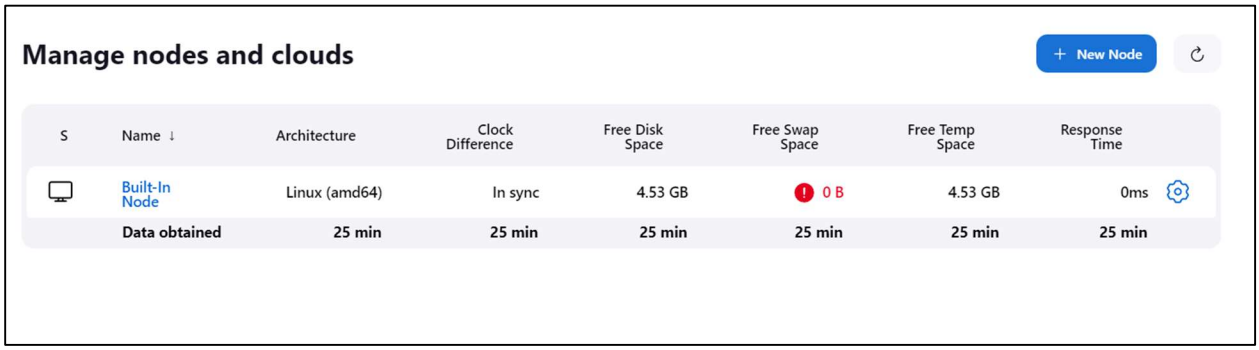
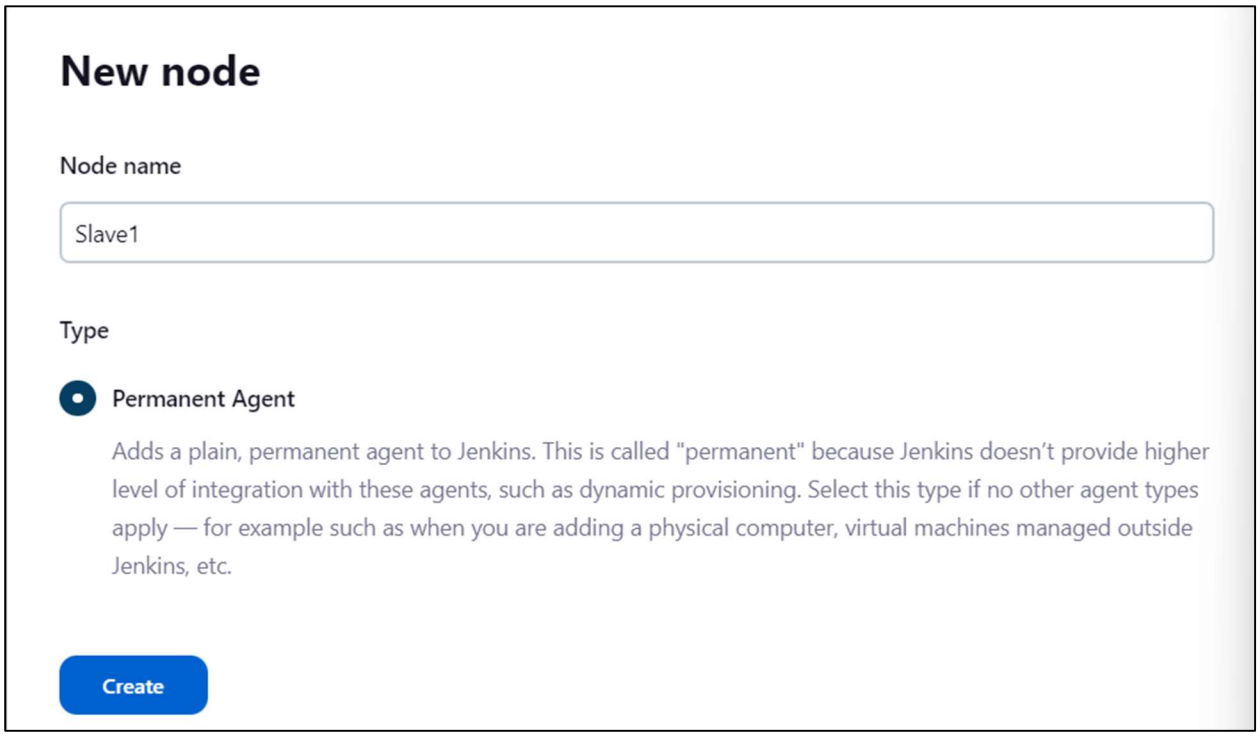
Practical Output:

Creating New Node/Slave:









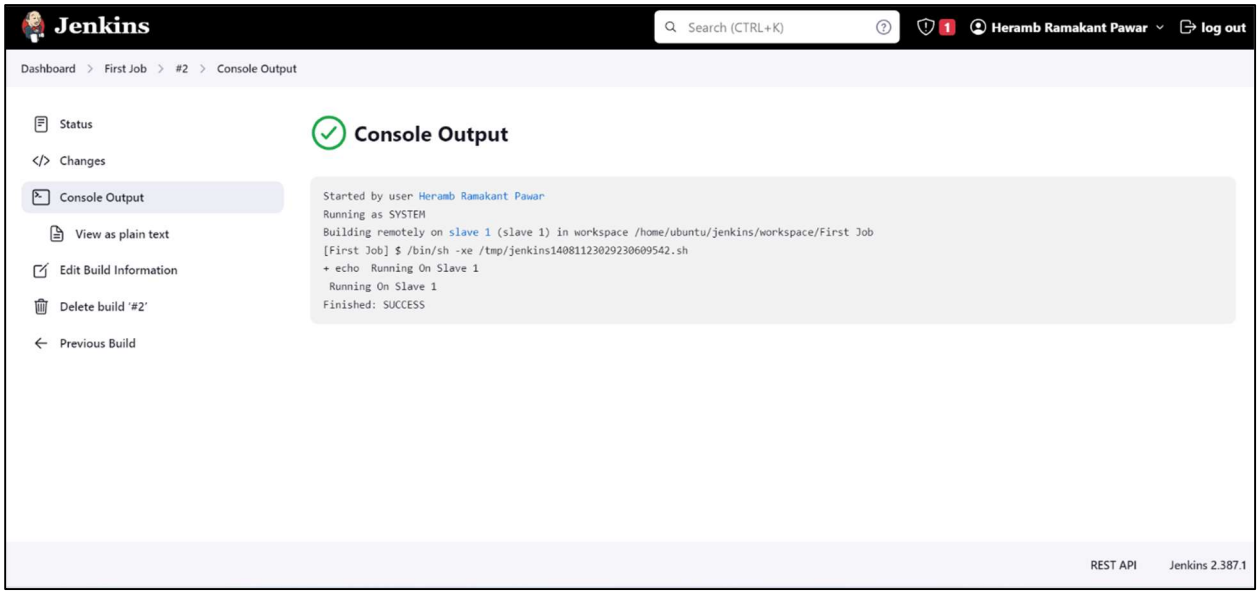
Note:

1. Parallel install **java jdk version between 8 to 11 on slave**
2. Create a folder **Jenkins** on slave1 and give all permissions to it
3. add the address of the same on master

```
ubuntu@ip-172-31-12-203:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-12-203:~$ mkdir jenkins
ubuntu@ip-172-31-12-203:~$ chmod 777 jenkins
ubuntu@ip-172-31-12-203:~$ cd jenkins
ubuntu@ip-172-31-12-203:~/jenkins$ pwd
/home/ubuntu/jenkins
```

Creating First Job That is To Be Executed On Slave1

Executing First Job on Slave1



Slave 1 Dashboard

Slave 1 Build History