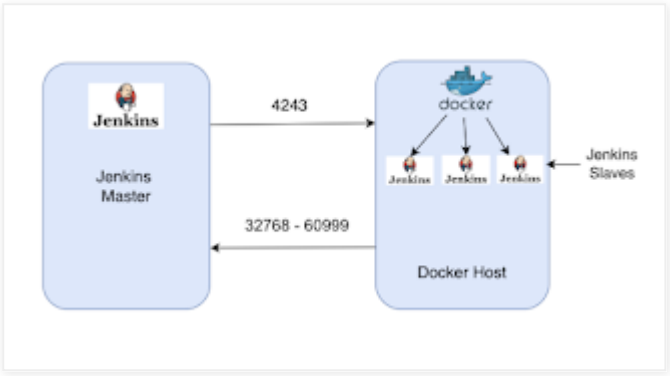
DevOps + Cloud Computing Coaching

Hands on DevOps Coaching that is provided on AWS and Azure Cloud platforms. Contact me at devops.coaching@gmail.com for more info. You can directly reach out to Coach AK at +1(469) 733-5248

Friday, August 12, 2022

How to setup Docker Containers as Build Agents | Setup dynamic Docker Slave and Integrate with Jenkins Master | Jenkins Build Agent Setup using Docker

Jenkins has powerful feature of master slave architecture which enables distributed builds. This article we will learn how to setup slave nodes using Docker and integrate with Jenkins Master.



Advantages of using Docker Containers as Jenkins Build Agents

- Ephemeral
- Better resource utilization
- Customized agents as it can run different builds like Java 8, Java 11
- Scalability

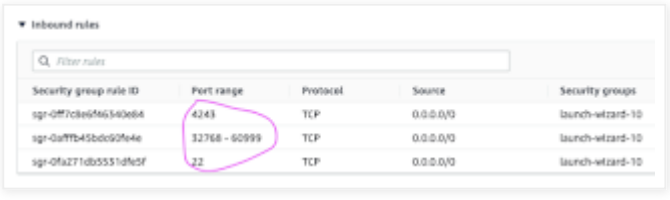
Let us see how to configure slave nodes dynamically using Docker. If you like to learn how to setup Jenkins Master on Ubuntu EC2 instance, click here.

Watch this in YouTube channel:

How to Setup Dynamic Jenkins Slave using Docker | Setup ...

Pre-requisites:

- Jenkins Master is already setup and running
- port 8080 opened in Jenkins EC2's firewall rule
- Setup Docker host. Creating another EC2 instance is recommended to serve as a Docker Host.
- port 4243 opened in docker host machine
- 32768 - 60999 opened in docker host machine



Step 1 - Configure Docker Host with Remote API

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Labels

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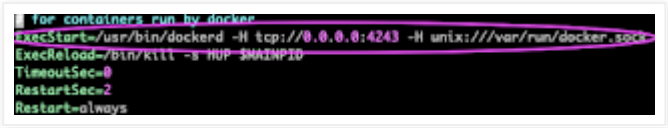
Login to Docker host machine. Open docker service file. Search for ExecStart and replace that line with the following.
sudo vi /lib/systemd/system/docker.service



You can replace with below line:
ExecStart=/usr/bin/dockerd -H tcp://0.0.0.0:4243 -H unix:///var/run/docker.sock

Restart Docker service

sudo systemctl daemon-reload
sudo service docker restart

Validate API by executing below curl command

curl http://localhost:4243/version

Step 2 - Build Jenkins slave Docker image

Download Dockerfile from below repo.
git clone https://github.com/akannan1087/jenkins-docker-slave; cd jenkins-docker-slave

Build Docker image

sudo docker build -t my-jenkins-slave .

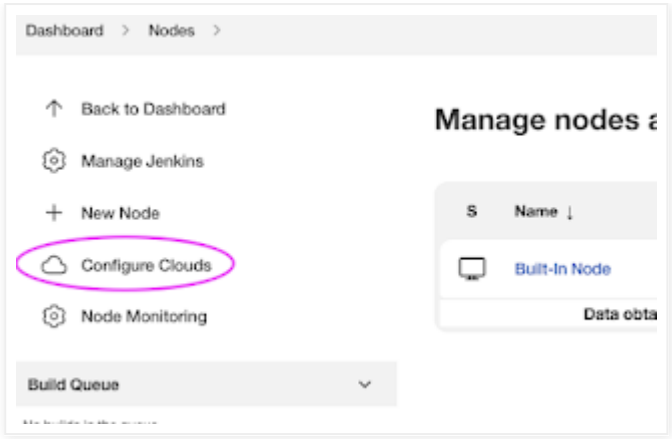
Perform below command to see the list of docker images:

sudo docker images

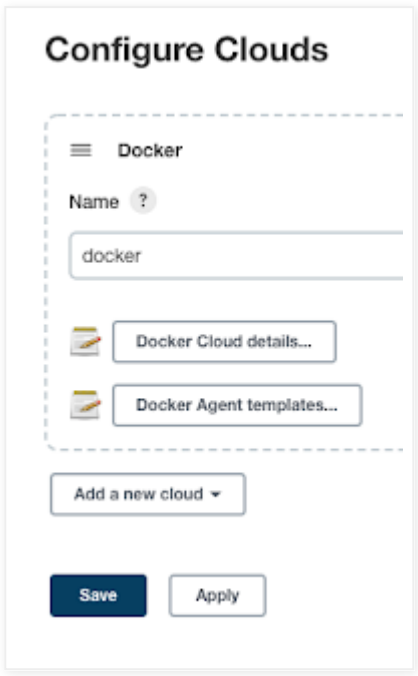
Step 3 - Configure Jenkins Server with Docker plug-in

Now login to Jenkins Master. Make sure you install Docker plug-in in Jenkins.

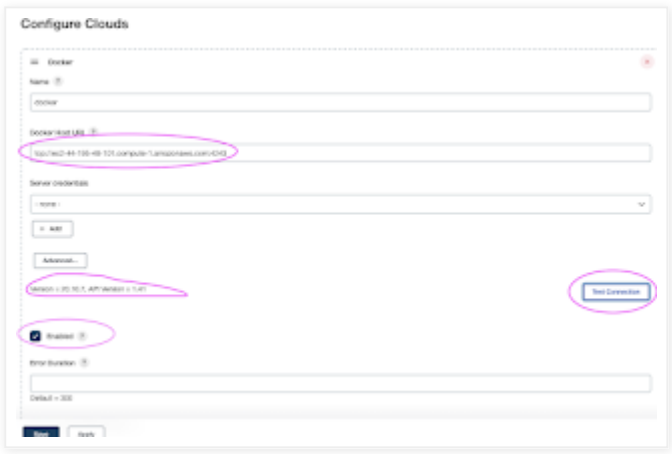
Now go to Manage Jenkins -> Configure Nodes Cloud



Click on Docker Cloud Details

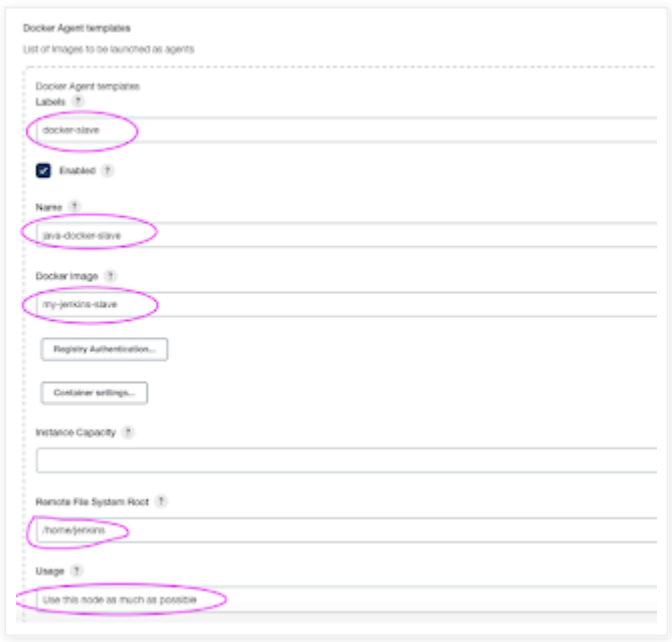


Enter docker host dns name or ip address
tcp://docker_host_dns:4243
Make sure Enabled is selected
Now click on Test Connection to make sure connecting with docker host is working.



Step 4 - Configure Docker Agent Templates

Now click on Docker Agent templates:
Enter label as "docker-slave" and give some name
Click on Enabled
Now enter the name of the docker image you have built previously in docker host.
enter /home/jenkins as Remote file system root



Choose Connect with SSH as connection method:
Enter SSH credentials per your Dockerfile - jenkins/password

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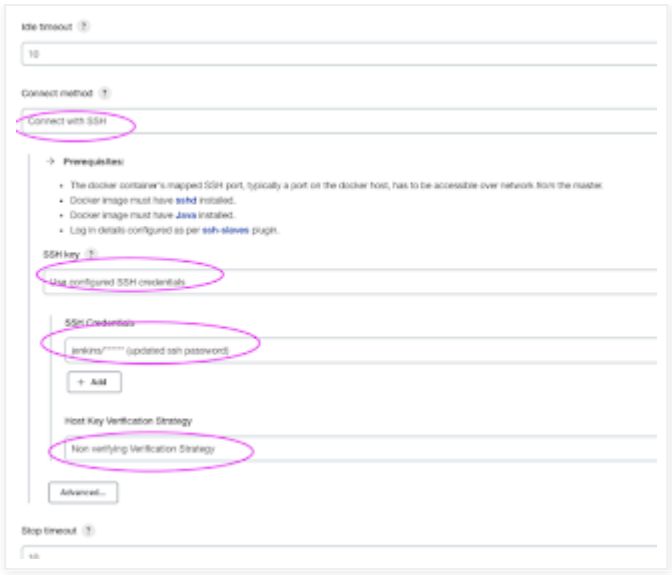
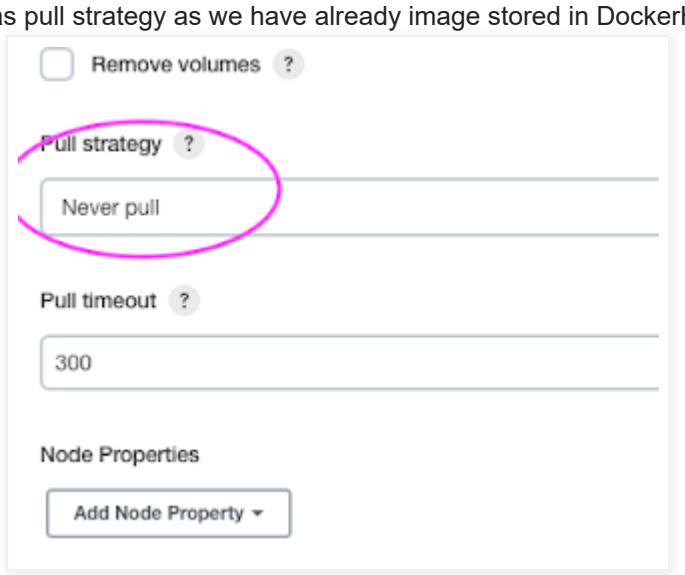


choose Never Pull as pull strategy as we have already image stored in DockerHost.



Click on Save.

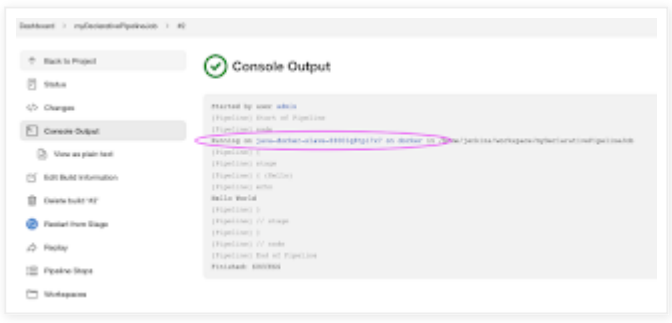
Step 5 - Create build job in Jenkins

Now Create a pipeline job in Jenkins with below pipeline code:

```
pipeline {
    agent {
        label "docker-slave"
     }
    stages {
        stage('Hello') {
            steps {
                echo 'Hello World'
            }
        }
    }
}
```

Click Apply and Save.

Now build the job. Now you will see output like below:



Create a free style job

Choose Restrict where this project can be run and enter docker-slave as label

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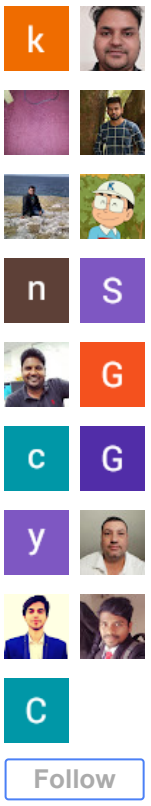

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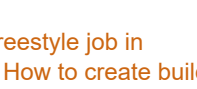

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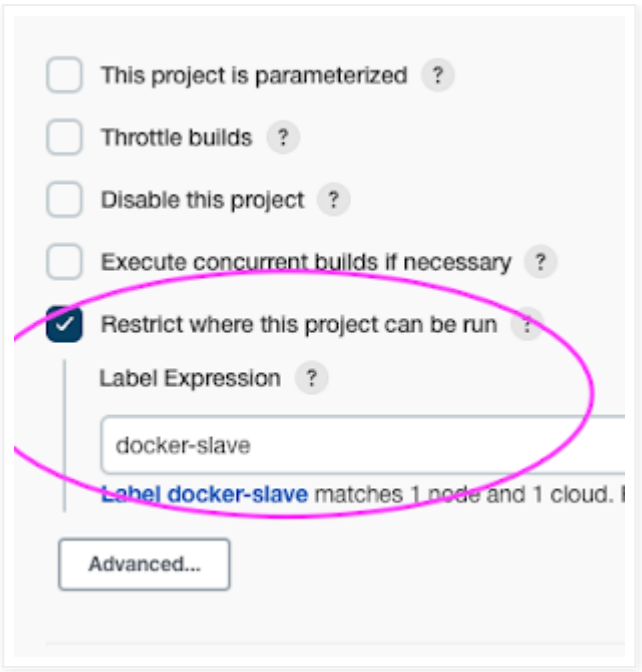

- August 12, 2022

Labels: Build Agents, Jenkins, Jenkins integration, Slave

1 comment:

Eswar krishna Maganti April 8, 2024 at 5:29 AM

Hi bro,
where to check the run time agent containers in EC2 instance,
i have tried using docker container ps command but no containers are in running state.
can u pls reply

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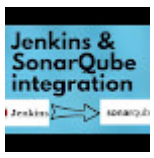

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