***GITHUB ACTIONS***

***Scenario:***

CICD implmentation to automate build and push to Image registry using GitHub actions.

**Pre-requisites:**

Deploy NodeJS application in the windows system

Push this application to GitHub.

Create a file using GitHub Actions *.github/workflows/deploy.yaml*

1. create a nodejs application

For that download node js and visual studio in the base machine.

Create a directory

# mkdir node

# cd node

* In the GITHUB create a repository. In the repository create a .github/workflows/deploy.yaml file in that paste the below code.

name: Deploy to Docker Hub

on:

push:

branches:

- main

jobs:

build-and-deploy:

runs-on: ubuntu-latest

steps:

- name: Checkout code

uses: actions/checkout@v2

with:

ref: main

- name: Set up Node.js

uses: actions/setup-node@v3

with:

node-version: 16

- name: Login to Docker Hub

uses: docker/login-action@v1

with:

username: ${{ secrets.DOCKER\_USERNAME }}

password: ${{ secrets.DOCKER\_PASSWORD }}

- name: Build and push Docker image

uses: docker/build-push-action@v2

with:

context: .

push: true

tags: ${{ secrets.DOCKER\_USERNAME }}/docker:latest

* then commit the changes.
* Upload app.js file

const express = require('express');

const app = express();

const PORT = process.env.PORT || 4000;

app.get('/',(req,res) => {

res.status(200);

res.send("Hello World, I'm swapna...!!!");

});

app.listen(PORT, () => console.log(`App listening on port ${PORT} `));

* Upload package.json file

{

"name": "node",

"version": "1.0.0",

"description": "",

"main": "index.js",

"scripts": {

"start": "node app.js",

"test": "echo \"Error: no test specified\" && exit 1"

},

"keywords": [],

"author": "",

"license": "ISC",

"dependencies": {

"express": "^4.18.2"

}

}

* Go to GitHub where your repository is present. Click on settings 🡪 In the left sidebar click on secrets and Variables 🡪 click on Actions 🡪 click on New Repository Secret 🡪 Give the name and give the username of Docker Hub Repository 🡪 Again click on New Repository secret Give the password of the Docker hub repository.
* We are keeping our Docker Hub username and password here because to make our repository details secure. That’s why in the workflow code also we didn’t mention our Docker Hub details we just call them from the secrets path.
* Write a Dockerfile,For deploying nodejs applicatication using GitHub Actions.

In this code we take *a* ***Node latest*** image as the base image

We are copying ***package.json*** file from the current location to container current path (.).

To start the *NodeJS* application we need to run the command ***npm Install*.**

We are copying all the files in the current path to the container current path.

The command ***“node app.js”*** is specified, which means that when the container is started, it will execute the “app.js” file using the Node.js runtime. This assumes that Node.js is installed in the Docker image. So, when the container is launched, it will run the “app.js” file using Node.js as the entry point for the application within the container.

FROM node:latest

COPY package.json .

RUN npm install

COPY . .

CMD ["node", "app.js"]

* Now header below there are some options in that click on Actions. It will takes you to the actions page. In that page, In the left side bar there are work flows click on the workflow which we created now. Then it will execute the code in our Repository.