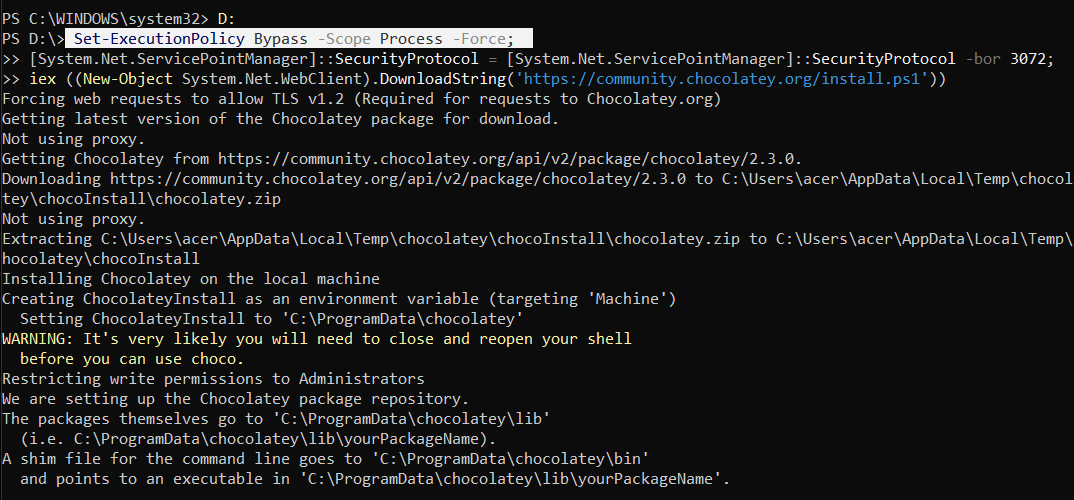
**KUBERNETES**

* **Installation**

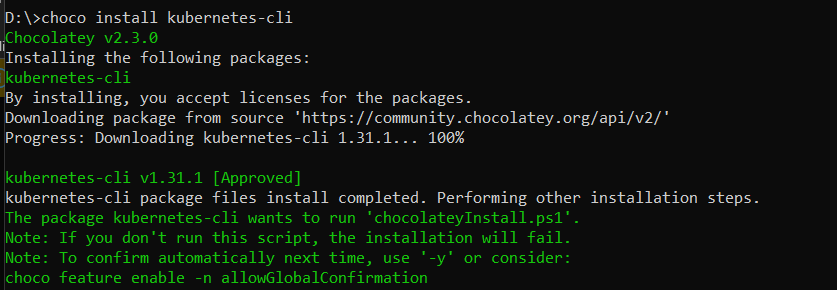
1. **First Install Chocolatey in Your Pc in Windows PowerShell-Run as Administrator**

**Command: Set-ExecutionPolicy Bypass -Scope Process -Force; [System.Net.ServicePointManager]::SecurityProtocol = [System.Net.ServicePointManager]::SecurityProtocol -bor 3072; iex ((New-Object System.Net.WebClient).DownloadString('https://community.chocolatey.org/install.ps1'))**

****

1. **Open CMD- Run as administrator and install kubectl. Run all the following commands on CMD**

**Command: choco install kubernetes-cli**

****

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1. **Confirm if kubectl is installed:**

**Command: kubectl version –-client**

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1. **Run cd %USERPROFILE%**

****

1. **Run mkdir .kube**

****

1. **Now go to D drive and to .kube folder. Inside the .kube folder create a Text file and name it config.txt**

****

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1. **Next install Minikube**

**On CMD-Run as administrator:**

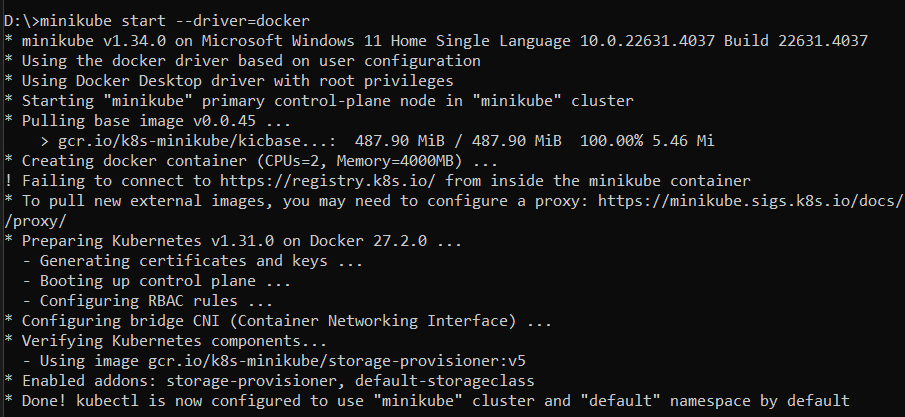
**Run command: choco install minikube**

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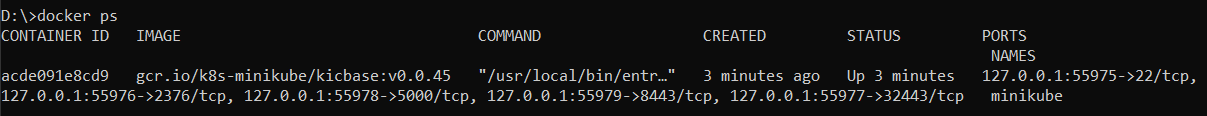
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1. **Now make a Kubernetes cluster using command**

**minikube start --driver=docker (ensure system has docker else install docker desktop)**

****

1. **Run command docker ps to verify if your containers are up**

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1. **Run minikube status to verify**

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1. **Running a pre-existing application (example nginx) on Kubernetes**

* **Go to Docker hub-search nginx**
* **On CMD run command: kubectl create deployment my-nginx --image=nginx:latest**

****

* **Check if my-ngnix was create: run kubectl get deployments**

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* **Check If pod was created: run kubectl get pods**

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* **Expose the pod to minikube:**

**Command: kubectl expose deployment my-nginx --port=80 --type=LoadBalancer**

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* **Check if your service is exposed**

**Command: kubectl get services**

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* **Link your service with minikube**

**Command: minikube service my-nginx**

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In case of errors run following command and restart:

**To delete the existing pods and container:**

**minikube delete**

**Run this and repeat everything here(follow everything above):**

**minikube start --driver=docker**

* **RUNNING A CUSTOM APPLICATION IN KUBERNETES**

1. Open VS Code
2. In VS code Terminal run to check if node is installed

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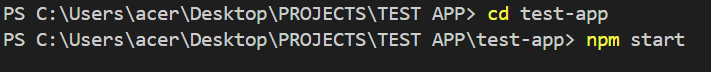
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1. Create a new react app

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1. Run the project



1. Make changes to App.js file

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1. npm-start

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1. Now delete node\_modules
2. Right click on your project and create a new file-name it Dockerfile





1. Inside the docker file write:

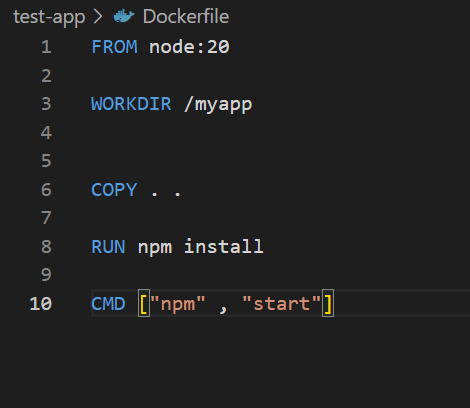
FROM node:20

WORKDIR /myapp

COPY . .

RUN npm install

CMD ["npm" , "start"]



1. Now we want to create an image of this app

For this go to docker.com, sign up, and go to docker hub, create repository

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Click on create

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1. In VS Terminal run:

docker build -t dakshitathakkar/my-nginx:01 .

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1. On VS code terminal run to verify:

docker iamges  
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1. Next Login to docker, On VS code terminal run:

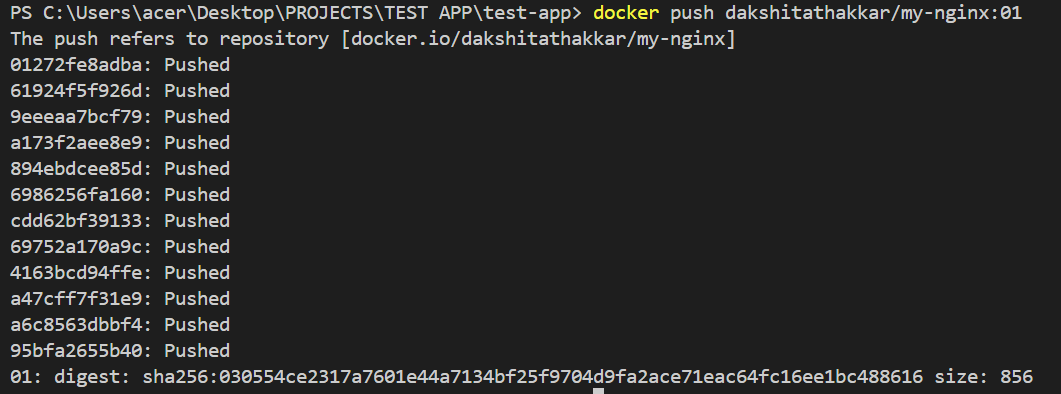
docker login

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1. Now push your image to repository, On VS code terminal run:

docker push dakshitathakkar/my-nginx:01



1. Refresh dockerhub- you should see your image

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1. Go to CMD run minikube status

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1. Create a deployment



1. Check if deployment created:

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1. Check if pod is running:

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1. Expose it to minikube



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A screenshot of a computer

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* **SCALING ON KUBERNETES (INCREASE OR DECREASE THE NUMBER OF PODS)**

1. **Scaling Up:**

**Command: kubectl scale deployment my-test-app --replicas=3**

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**To verify, run: kubectl get pods**

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Description automatically generated**

1. **Scaling down:**

**Command: kubectl scale deployment my-test-app --replicas=3**

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**To verify, run: kubectl get pods**

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